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Incorporating Commodore Business Magazine

NOVEMBER 1988

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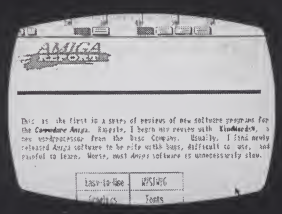
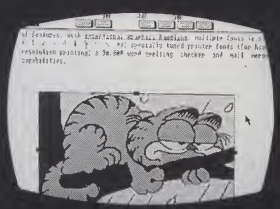
KINDWORDS

Impressive reviews? They'll be lost for words when they see the new KindWords 2.0. It's still as easy to use as its famous predecessor but now boasts a new 100,000 word English dictionary licensed from Collins, a 470,000 word thesaurus and automatic hyphenation.

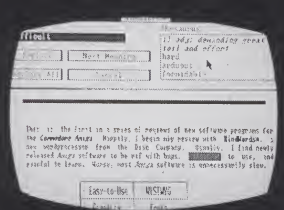


So it knows the difference between 'colors' and 'colours' and how to use them. Because with KindWords you can easily import graphics into your text documents and produce professional documents that really impress.

As it was designed specifically for the Amiga, KindWords works with your computer, not against it. Pull down menus and full help facilities are used to the maximum advantages – so advanced features such as spell checking and mail merging are easily accomplished.

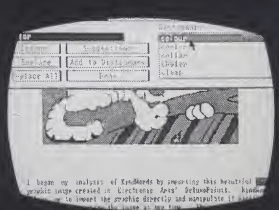


There's a new extensive font library which combines with graphic editing facilities that make KindWords an extraordinary word processor at an unbelievable price.



Which only goes to prove that sometimes you should believe what you read in the press.

Existing KindWords users can upgrade their software for £14.95 inc VAT by calling freephone 0800 111 1111 or write to Disc Company Europe, 1 rue du Dôme 75116, Paris, France. Visa, American Express accepted.



Dealers should call Amiga Centre 031-557 4242, GEM 0279-412441, HB Marketing 0895-444433 or Microdealer 0908-74000.

Price
£49.95
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THE DISC COMPANY

MORE KINDWORDS

"The excellent KindWords includes everthing you'd expect to see in an Amiga word processor with many extras."

ST Amiga Format

"KindWords is considerably cheaper than most Amiga word processors... its documentation is well produced and readable... contains quite a number of advance features... good value for money"

Amiga Computing

"KindWords is stylish and uncluttered... simple and elegant with a lot going for it... KindWords is a program written with care, everything about it shows consideration for the user."

Amiga User International

"I found KindWords both powerful and flexible... I think most users will be delighted with KindWords' logical design and power."

Commodore Magazine

"KindWords Superfonts produce attractive, high-quality printouts even from inexpensive dot-matrix printers."

Amiga World

THE AMIGA DIMENSION

ONLY THE AMIGA MAKES IT POSSIBLE

Recently, one of the USA's top experts was asked to name the most important computer developments of the last 25 years. The tart reply was that there had been none; an answer that might be considered only a slight exaggeration. For most of the technological advances emerging today are clearly based on research carried out, in computer time scales, a long way back.

Just as Einstein's work, earlier in the century, led to major progress in the physical sciences in the 1940's and later, so the Amiga of today is still very closely following the ideas created by the original team led by Jay Miner at the beginning of the eighties. And the Intel 68000 series itself goes back many years before that.

Yet there continues to be criticism from people who think that tomorrow should be today, that hardware should, once developments like the transputer are mentioned, immediately be made available at mass market prices, that software should at once find programmers who can leap into a more demanding technological dimension without a fair learning period.

Why don't CBM sell a 68030 or 040 Amiga with 2Mg Memory for under £500? Why don't all the Amiga games now arriving have the quality of Jez San's Starglider? Why doesn't a computer expert recognise that the advent of low-price, high quality 16 or 32 Bit computers as a very significant development? Because it can and usually does take many years for even the best ideas from even Einstein to enter the mainstream of activity.

There are exceptions, though The Einstein photo on the cover of this issue comes from a demo by a young Austrian programmer **AUI** met at the PC Show in London in September. Under a month . . . In this case, **AUI** we may claim, has moved, technologically-speaking, with an almost Einstinian light-speed. The difficult we can do at once , the impossible . . .

Antony Jacobson, Managing Editor and Publisher

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WHAT MAKES A MEGA-HIT? Intensity. You've seen arcade games evolve, and you demand state-of-the-art gaming. HYBRIS is so bold, so new, so incredibly filled with arcade action, it qualifies as the vertical shoot-em up game that will power you into the 21st century. HYBRIS marks the beginning of a completely new era of mega-hits. You do more than just play HYBRIS. You immerse yourself in action!

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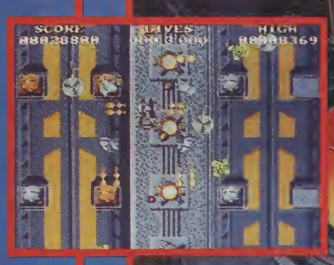
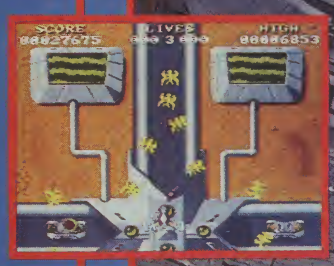


- Strike special targets to give your cruiser added dimensions—unbelievable fire power, extra missles, an invincible mode and more . . .



- Experience fighter action from the command center of 11 different ships—mechanized for mega-blasting!

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NEWSFILE

WYSIWYG AMIGA ANIMATION

MovieSetter is a true WYSIWYG animation program from Gold Disk. Derek Grime of "Beyond Graphics" (Toronto) told us, "MovieSetter" is so incredibly easy to use, a novice animator is able to create action cartoon sequences, with full stereo sound, in just a matter of minutes. This program approaches animation from the conventional animator's perspective. You move the characters and objects around your scene and actually watch your sequences develop."

MovieSetters allows you to produce complex animation sequences of several minutes duration with only 1 Meg of memory. You can use built-in, professionally drawn movie-clip files, or create your own 32 colour images within the program. IFF graphics from other programs, such as Deluxe Paint II and Comic-Setter, may be imported into MovieSetter. The mouse is used to change positions of characters and objects over static or scrolling backgrounds. Sounds may be generated within the program altering duration, pitch and volume. It is even possible to attach stereo sound to characters and listen to them move from one side of the Amiga's monitor to the other. Special features such as colour cycling, playback at up to 60 frames per second and linear and elliptical guides help you to create special animation effects and full video overscan allows you to save feature length productions to your home video library.

The package requires a minimum of 1MB of memory.

Price: $99.95 Contact: Gold Disk, P.O. Box 789, Streetsville, Missisauga, Ontario, Canada L5M 2C2 (416)828-0913

FASTER BASIC

Now Amiga users can exploit the power of their machine without having to learn another computer language — HISOFT BASIC is here for the Amiga. This is a high specification compiler that takes BASIC programs and converts them into fast pseudo machine code at a single key stroke.

HiSoft BASIC closely follows MICROSOFT's standard BASIC which is recognised by many as one of the world standards. It can compile regular AmigaBASIC programs but also extends the language to include features from several other advanced BASICS. HiSoft BASIC also supports all of the Amiga library routines in the same way as the interpreter but allows compiled code to be linked with assembly language or C for maximum flexibility.

Programs in Hisoft can be as large as the memory will allow — strings may be up to 16 megabytes long and arrays any number of dimensions and size. More importantly, in a multi-tasking environment such as AmigaDOS, it makes sensible use of the free memory pool. HiSoft BASIC, although a compiled language, has an integrated editor allowing for memory-to-memory compilations and interactive error correction. Compiled programs can either share a common library or be stand-alone. They may also be sold or given away without licensing fees.

Price: £99.95
Contact: Hi-Soft, The Old School, Greenfield, Bedford MK45 5DE. (0525) 718181.

DEVPACK 2.0

When the original DEVPAC AMIGA was released nearly two years ago, it was regarded by many as one of the best products of its type. Now version 2 has been released with a significant number of improvements, achieved by re-writing the major parts of the program from scratch.

DEVPAC AMIGA consists of a screen editor, a high performance macro assembler and symbolic debugger with all three programs being integrated into one package allowing faster development time and greater ease of use. The largest improvements come with the ASSEMBLER, including multisection code, long labels, local labels and a binary include directive. Hi-Soft tell us that the assembler is now up to three times faster than the previous version, which was itself considered to be the fastest assembler on the Amiga.

The new version is now completely source compatible with the official Commodore assembler whilst still retaining the features that helped make version 1 so popular such as macros, include files and the ability to generate both executable and linkable code. The FULL SCREEN EDITOR also has several improvements, including more block handling commands and the ability to create backup files when saving source code. The good news, also, for version 1 users is that there is now an easy-to-use file selector.

The DEBUGGER now uses multipe windowing so that several areas of memory can be monitored at once, for example, offering many additional types of breakpoints, including conditionals. The single greatest improvement overall, though, is the integration between the packages; both the assembler and debugger are instantly available from within the editor and programs can be assembled directly to memory for reduced development times.

Price: £59.95
Contact: Hi-Soft, The Old School, Greenfield, Bedford MK45 5DE. (0525) 718181.

Dysan Organised

A Personal desk organiser, containing over a dozen useful items such as stapler and scissors, is being offered free with every five boxes of any type of Dysan diskettes.

At the same time, Action has reduced the prices of all types of Dysan 5.25in and 3.5in disks. The 3.5 inch Dysan disks are down from £21.40 to £19.23 per box.

The organiser includes scissors, knife, eraser, highlighters, stapler and remover, pencil and sharpener, pen, adhesive tape, notepad and tape measure and has a compartment containing paper clips and rubber bands. All are housed in a zip-up carrying case measuring 215 × 150 × 30mm.

CONTACT: Action Computer Supplies, Abercorn Commercial Centre, Manor Farm Road, Wembley, Middx, HA0 1WL. Tel: 0800 333 333.

FUSION

The latest Amiga arcade/strategy game from Electronic Arts is Fusion, developed in the U.K. by Bullfrog Productions. The game includes detailed animation graphics with full 8 directional parallax scrolling, varied levels and music and digitised sound effects, processed with a professional drum machine.

The idea of the game is the total destruction of the alien planet, which can only be achieved by collecting the scattered remains of an ancient but powerful bomb. To do this it is necessary to move through the different levels, dealing with all sorts of weird and wonderful nasties. These include homing missiles, rotating plasmo spheres, nitro mice, U.H.O.s and ergonomic erupters. However, the player is able to build up the ship's defences with Electro Shields and "multi" and "Mega" bullets.

Fusion features a detailed information panel, with an encoded base ten alien numeric scoring system, ship's structural indicator, a shields' energy level bar and active switches and bomb display units. It can be played on normal or expert level and may be saved on any level featuring a disk icon.

Price: £24.95

ELECTRONIC ARTS
1820 Gateway Drive, San Mateo, CA 94404

3-D Design

Aegis Development Inc. have now begun shipping their Modeler 3D, a three-dimensional object generation program for the Amiga. The program will allow you to create anything from simple, 3D geometric shapes to complex, mathematically accurate objects in a CAD environment. The results may be loaded into Aegis VideoScape 3D and manipulated as part of an animation sequence.

"Modeler 3D's features accomodate the novice to the advanced used and offer a connection in the path of product compatibility," said David Barrett, Aegis' President and CEO. The package is designed in such a way that any drawing created in AegisDraw, AegisDraw Plus or AegisDraw 2000 may be loaded into Modeler 3D. Then the extrude command may be used to provide the third dimension. In fact the drawing can be treated in just the same way as those that have been created on Modeler 3D.

Another feature of Modeler 3D is the ability to create a motion file for the object or camera to follow once it is loaded into VideoScape 3D. The minimum requirements of the program are 1Meg of RAM and one disk drive, although Aegis do recommend more memory and a second drive or a hard disk.

STARVISION

Starvision have announced the forthcoming release of several new games for the Amiga. They include Snowberry on thin ice, designed to appeal to younger players and featuring the cartoon bear, skating around on thin ice and meeting dangerous birds, funny creatures and the like. Starvision tell us that Snowberry will work with joystick control, 5 challenging levels and lots of funny tricks and jokes. They say there is no violence included in the game. The scheduled date for release is December 1st 1988.

Another Starvision game due for release at the same time is Twin Ranger, an arcade shoot-em-up in which the player assumes the role of the last surviving warrior in a world which has been taken over by computers. He has to destroy the menacing computer in order to restore the old days when the air was clean, the rivers were fresh and people controlled the earth. On his side the Twin Ranger has energy absorbing weapons and various means of attacking the master control computers. He will eventually progress through different times and worlds until peace is restored.

Due for shipping on 1st November is Mega Pinball, offering four different screens of 640 x 384, eight direction scrolling, flippers, bumpers, jumpers, tunnels and bonus sections. You can even set the angle of the machine effecting the speed of the ball, or initiate a four player mode.

We will have to wait a little longer for the other new game from Starvision Starfighter one. This one features a poor, unfortunate princess who has been crystalised and broken into seven different places. As she is the only one who can bring peace to the galaxy, your task is to find all the parts of the princess and reassemble her. Your mothership, Starfighter one comes well equipped with space to space and ground radar, listeners, photon canons, bombs and an array of special weapons that can help you with each attack. The game combines vector and normal graphics with sound and music to add to the atmosphere. We are told that Starfighter one is due on the shelf on 1st February 1989.

New Style WS4000

Miracom have re-vamped the Miracle WS4000 V21/23 modem, with a new style case, tone dialling and an audio call monitor. To go with the new image there is also a new price, £132 (a drop of £38). The WS3000, which operates at V21/22/23 has come down £100 to £295 with the V21/23/22/22bis model now costing £415 (a saving of £70). Miracom say that the price reductions have been brought about by competition in the modem market.

Supramodem 2400

Supra have come up with a new European version of the Supramodem 2400, which offers asynchronous operation at 300/300 (V21), 1200/1200 (V22) and 2400/2400 (V22bis). It includes auto answer and dial (pulse or tone) and a programmable-volume speaker for monitoring call progress. The modem's programmable non-volatile memory can be used to store telephone numbers and user configurations. Unlike the previous US version the European one operates at all three CCITT standard speeds.

Martin Walsh, the Marketing Manager of Frontier Software, who distribute the modem, said "The Supra-Modem 2400 has proved to be one of the most successful modems in the States this year, selling tens of thousands of units. The new European version will allow Frontier to push the Supra-Modem 2400 into the UK market. We will also be upgrading all SupraModems sold so far in the UK to the new European version, free of charge."

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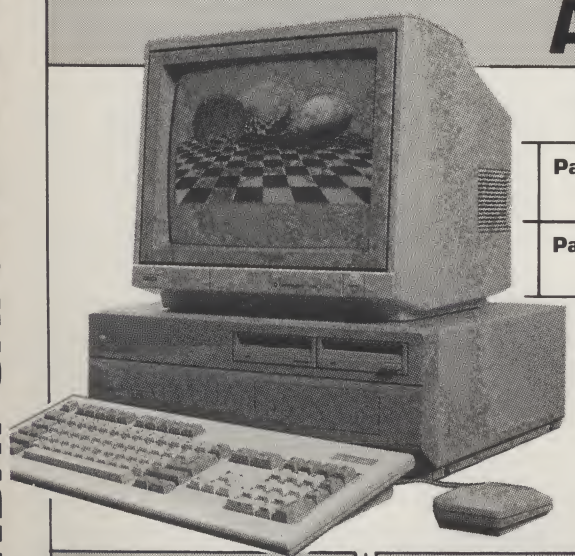
Amiga 1084S	£209	NEC 3.5" Ext. Drive	£77	Philips 8833 Monitor	£239	10 x DS/DD	£13.00	Mouse Mat	£3.50

AMIGA B2000



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Taxan 770+ M/Sync Monitor	£485.00
A2010 Internal 3½" Drive	£149.00
A2052 2Mb Ram Expansion	£347.00
A2088 XT Bridge Board	£435.00
A2094 Amiga 20Mb Hard Disk	£539.00
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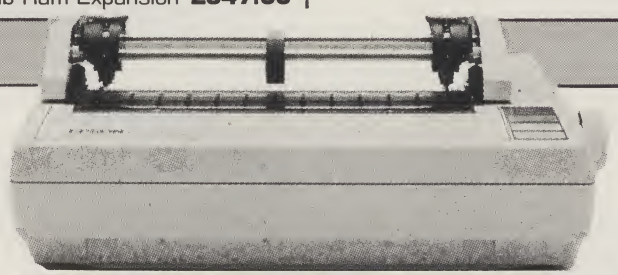

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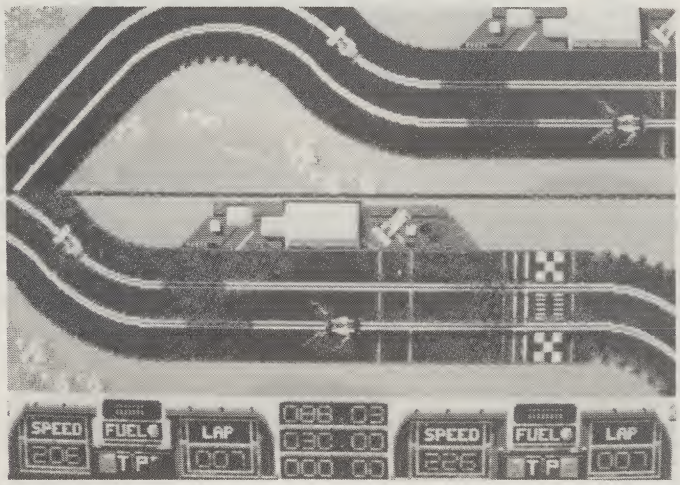
Turbo-Trax

Microdeal have described their new game, Turbo-Trax, as "The ultimate model racing game for the Amiga." They will have you zooming round the track and timing your pitstops to the second. Beware of the hazards set to make the game more difficult, though, Hear the crowds roaring as the chequered flag comes into view, will you take first prize?

With 8 additional track options, four channel stereo sound, split-screen 4-way scrolling, chicanes, cross overs and pitstops, three difficulty levels, time trials for up to six players and lap records saved, Microdeal are convinced that Turbo-Trax must be a good contender for the best racing car game ever on the Amiga.

PRICE: £19.95



Twin Drives for the Amiga

Memory and Storage Technology Inc., have launched two new 880K external floppy disk drives for the Amiga: the Unidrive and the Twindrive.

Both units have a small footprint, with the Twindrive being two inches high and the Unidrive a mere one inch high. The drives are switchable to enable the running of programs which do not execute when an external drive is connected.

The M.A.S.T. drives require 6mA and 12mA respectively of standby power. Thus the drive should remain very cool. Both units can be powered by the Amiga or from an external power supply. In addition, the click that occurs when the disk is removed from the drive can be disabled and a hinged dust cover protects the heads when the drive is empty.

PRICE: $169 Unidrive
$229 Twindrive

CONTACT: Memory and Storage Technology, Inc., 7631 East Greenway Road, Scottsdale, AZ 85260. (602) 6359.

IEEE for the Amiga

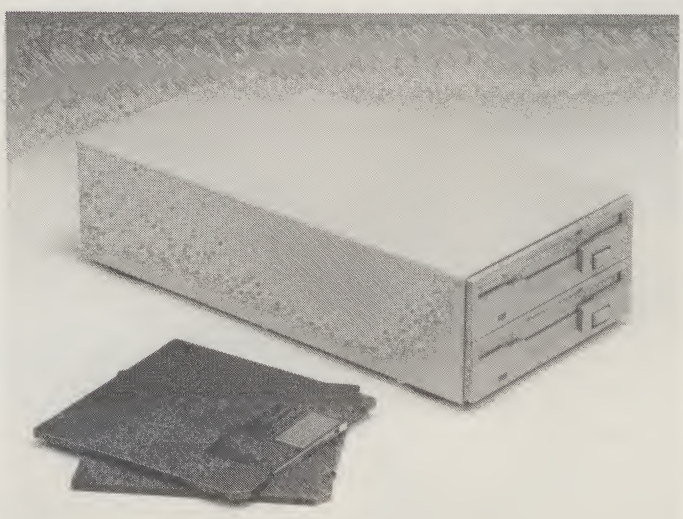
Twin-X is a full Zorro II (A2000) compatible Amiga expansion card which can host any two IEEE 959 modules or one double wide IEEE 959 module. To the Amiga, the Twin-X is a completely standard, fully auto-configuring expansion board. To each IEEE 959 module, the Twin-X is a standard IEEE 959 host. It will enable the Amiga to interface with any of the hundreds of IEEE 959 modules. If none of the existing modules fit your needs then ASDG's engineering team will try to produce one to your specifications. The ASDG software team (responsible for FACC II and the ASDG Recoverable RAM Disk) is available to create custom drivers to support pre-existing modules designed for you by ASDG.
Price: TBA
Contact: Amiga Cente Scotland, 4 Hart Street Lane, Edinburgh EH1 3RN. (031) 557 4242.

City Desk

Fed-up with all your computer paraphernalia fighting for space on your worktop? Heartily sick of trailing leads which all have to be disconnected just to move the desk a few yards? Wondering where to put that extra disk drive? Well take a look at CITY DESK, Priced at £139.50 (delivery free) City Desk Europe Ltd believe it may be the answer to all the congestion. A single pedestal desk, it houses drives, cables and paper neatly underneath with the CPU, monitor and printer above. It has lockable castors to allow easy movement of the whole unit around the room.

City Desk is designed to accept most leading computer systems including the Amiga and is strongly made with an easy-to-clean, heat and scratch resistant finish. The desk, when it is delivered, arrives packed flat but with a complete set of assembly instructions and fittings and can be easily constructed with a choice of the drawer on the right or left hand side.

PRICE: £139.50
City Desk Europe Ltd, 24-26 Queens Road, Reading, Berkshire RG1 4AU. 0734 594145.



Mannesman Tally

The new 24 pin dot matrix printer from Mannesman Tally is the MT222. It produces 220 characters per second in draft mode and 72 cps in letter quality. Optional font cartridges are available to provide extra fonts and colour and paper parking is a handy feature. The printer comes with either an RS232 serial interface of a centronics parallel interface and Epson, NEC, IBM proprinter and MT Ansi printer emulations. PRICE: £695.

HP-Compatible Front Cartridges

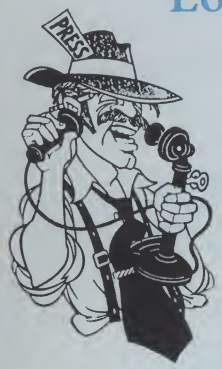
The complete range of A to Z standard fronts for HP and compatible laser printers is offered by Action Computer Supplies.Each Double Tops cartridge holds two, three, or even four fonts and costs £189.

"We offer multiple font sets on a single high quality cartridge at a lower price than a single HP standard cartridge. This not only gives the user faster access to multiple fonts and greatly enhanced flexibility but considerably reduces costs", says Action's Roger Bulkeley.

Double Tops font cartridges are made by Fontware, Europe's largest digital type supplier. They are fully compatible with HP Laserjet Series I and Series II, Laserjet + and Laserjet Series 2000 and are covered by a full 12 month warranty. The range includes cartridges KP, BD, HLC, UV, Y, AC, Z, JM, FQ, WX, R and EN.

MEGA DEMO PACK

"Lou, hold page one!"



The MEGA DEMO PACK for the Amiga is here. A pack of 7 disks, each filled to the brim with the latest and greatest demos. And Lou, you'd better mention that the sound and visual effects are stunning! I've never seen or heard anything like it. What Lou? Oh the price. It's a steal at £19.99 including P & P. And Lou, there ain't no Jugglers in this pack! It's all original material. (All demos run on a 512K Amiga with a single drive).

What our friend did not tell you was that we also have the complete FISH LIBRARY #1 to #147, AMICUS #1 to #26, FAUG #1 to #76 and TBAG #1 to #16. All at £3.00 each or £30.00 for 11 inc. P & P. Like to know more? Try the DOUBLE JUMPDISK PD LIBRARY PACK at only £4.00 inc. P & P (2 disks). Why buy PD from us? We are Amiga enthusiasts ★ We only specialise in hardware and software for the Amiga ★ We only use Sony DS/DD disks ★ We ship your order the same day it is received ★ If you experience problems we always try to help.

PROFESSIONAL RESULTS WITH DELUXE PAINT II

A new hard cover book now available in the U.K. from GEORGE THOMPSON SERVICES (available by Mail order on 1st November). PROFESSIONAL RESULTS WITH DELUXE PAINT II joins together basic illustration techniques with the power and capabilities of the most widely acknowledged graphics program for the Amiga. Crammed full of tips and tricks, even the beginner is shown how to produce the most beautiful pictures! Perfect colour-cycling, drawing of cartoon characters, transfer of illustrations and photographs to the computer, water colour techniques – all this and much more is lucidly covered with the pages of PROFESSIONAL RESULTS WITH DELUXE PAINT II. The creation of background pictures for slideshows, and their transfer to video is also demonstrated. Written by a professional, himself fully committed to the wonderful world of computer graphics, PROFESSIONAL RESULTS WITH DELUXE PAINT II opens up to the budding cartoonist the giant spectrum of the Hollywood dream factory!! More than 200 illustrations accompany the well-written and easy-to-follow text. From the contents: ★ basic illustration techniques ★ portraits and real life drawing ★ formation of characters in two and three dimensions ★ colour cycling ★ stencilling – the technique of perspective ★ production of slides for advertising ★ screen photography and video transfer ★ strip-comic painting workshop ★ video backgrounds and the design of landscape ★ Hollywood-style cartoons. PROFESSIONAL RESULTS WITH DELUXE PAINT II IS PRICED AT £24.95 THE PROFESSIONAL RESULTS WITH DELUXE PAINT II 'SET' includes in addition to the book, two disks packed with brushes, examples from the book and utilities and costs £44.95 Both are ideal Christmas presents for the discerning Amiga owner.

INT-SWITCH FOR THE AMIGA 500

The majority of A500 owners will sooner or later upgrade their memory to 1 Meg. Unfortunately there are numerous programs. Commercial, Public Domain and Demos that require a maximum of 512K to run without difficulty. It is possible to remove the memory expansion unit physically but this is not a recommended practice The alternative is to use a software switch. Workbench's NoFastMem disk will not survive the warmboot necessary to run commercial software. INT-SWITCH WILL.
INT-SWITCH IS AN OUTSTANDING PROGRAM THAT FREEZES RAM expansion. In fact it is so powerful it is necessary to switch off the Amiga to regain the extra memory.
Another very useful utility from G.T.S. for only £9.99.

JUMPDISK For the AMIGA

HED
Easy, effective text processor

Newszap3.18
Latest version of a tried-and-true editor.

WC – Word Count
Returns a file's character, word and line count.

Batcher
Eases batch file execution.

UD – Unlock Directory
Sets current directory to device rather than disk.

HAM & HAF
HAM and halfbright in Basic.

MONTHLY MAGAZINE ON A DISK

FREE DISK THIS MONTH

"You've got to admit chaps, these Anti-Virus programs in the September issue of JUMPDISK got us beat! We either crawl back into track 83 or change sides and tell the world about the October issue of JUMPDISK. Maybe then they'll leave us alone. Agreed? OK here goes Highlights of the 15 programs are:

Games include Tiles (remember Shanghai), Minilander: land the space buggy. Warp Patrol: zap the alien space ships. Tower of Hanoi and classic Adventure 'Wizard' now Amiga-ized.
Featured in the Article Section is the documentation for HED and all the other programs, second report on AmiExpo in Chicago, Tutorials on AmigaDOS and 'C'. Full details of the latest PD disks, plus reviews on PrintLink, Flicker Fixer, Shakespeare, Supra 2400 Modem, Crossword Generator, Zoom and much more.
And that's not all – THERE'S A FREE DISK INCLUDED WITH EVERY PURCHASE OF OCTOBER'S JUMPDISK!
It contains a taste of what to expect in the Mega Demo Pack. (If you already ordered this, let us know and we will substitute another gem!)
TWO PACKED DISKS FOR ONLY £8.50 inc.
By the way, if you missed September's issue, it's still available.

TURBOPRINT FOR ALL AMIGA COMPUTERS

CONGRATULATIONS! You have just purchased that perfect printer for printing your perfect pictures.
COMMISERATIONS! After hours of frustration there are still blank horizontal strips, an incomplete picture, poor aspect ratio and/or print overlap, etc. To make matters worse it takes an age to print even the smallest picture. The writers of TURBOPRINT took these and many more points into account. A graphical printer driver is far more complex than for text and TURBOPRINT includes a very large selection of Graphic Drivers for Dot Matrix, Thermo, Ink-Jet and Laser Printers. The special features of Turboprint include: Graphic Print up to ten times faster ★ Pictures are richer in contrast ★ By pressing hotkeys a picture may be dumped at any time ★ and much, much more. All for only £24.99 inc.

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The revolution Amiga printing system program ★ Graphic print up to ten times faster ★ Pictures are better and richer in contrast – you can choose four colour conversions ★ Now 4096 colours in HAM mode can be printed in sections and rotated ★ Special turbo drivers for any print density of your dot matrix printer, thermo printer, ink-jet or laser printer ★ Resident hardcopy function prints any screen you like ★ Thoroughly compatible with Amiga software ★ Installed resident in your computer's memory ★ Detailed English manual ★ Runs with all Amigas.

INT-SWITCH ..... £9.99 inc VAT
RECOMMENDED FOR THE A500 WITH OVER 512K OF MEMORY. An outstanding program that freezes RAM-expansion. Allowing programs requiring a maximum of 512K to be run without difficulty.

WE ARE GEORGE THOMPSON SERVICES – OUR ADDRESS IS: DIPPEN, BRODICK, ARRAN, SCOTLAND KA27 8RN. OUR TELEPHONE NUMBER IS (077082) 234.

PLEASE SEND A CHEQUE (WITH YOUR BANK CARD NO/EXPIRY DATE ON THE REVERSE) OR P.O. FOR THE APPROPRIATE AMOUNT AND WE WILL DESPATCH YOUR ORDER IMMEDIATELY.

COMIC SETTER

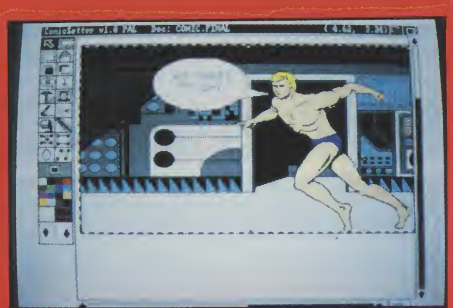
WHAM! BAMM!! SHAZAM!! Slower than a speeding bullet but just as explosive, it's ComicSetter. John Walker checks out what may be the best program of its kind.

ComicSetter is a comic-book design and production program with a 16 colour output. Even if you think Marvel is a brand of milk powder, instead of the home of the Hulk, Spidey, Silver Surfer and other super heroes – or imagine Superman to be something to do with Nietzsche rather than Clark Kent, the program should still interest you.

For what is a comic but an extremely sophisticated way of integrating graphics and text on a page? A comic is a complex arrangement, in an infinitely flexible layout, of graphics of all sorts and sizes, text in different fonts and speech balloons. With the tools and the art ComicSetter provides you can also use the program to create birthday cards, posters, advertisements, newsletters, storyboards or anything that needs instant graphic communication.

ComicSetter combines a comic book layout program with paint and draw tools, a simple text editor and clip art. It includes three special fonts that copy the style of speech balloon lettering. You can also use the Amiga's fonts or any other compatible fonts you have.

As in any comic-book, ComicSetter uses the concept of a panel as the basis of design. A panel, which can hold both text and graphics, can be of any size up to the limits of an 8.5 x 14 inch page or of 1008 x 1008 pixels.



Panels are rectangular, which is a limitation I would like to see changed in future versions. There is no reason why you should not be able to have a triangular, circular or irregular shaped panel. You can have as many, or as few, on a page as you want. You either draw the panel or define its position numerically. You can move it around, change its size and re-scale it, which will also change the scale of its contents. Also available is a grid, which can be used either as a visual layout aid or as a "snap to" feature, so that text and graphics will line-up with its intersections.

Graphics come in two styles: structured and bit-mapped. Unfortunately, structured graphics – mathematically defined lines and curves – cannot be imported from CAD programs such as Aegis Draw. They have to be drawn on the spot, using tools which include Bezier curves. Bitmapped graphics can be either be drawn or imported, using the clip art provided or loading images from any source that conforms to the usual IFF format. The limitations are that the art work should have no more than four bitplanes, which allows a maximum of 16 colours and rules out the use of HAM images.

"The clip art is of a good quality in a slightly old-fashioned style, more Flash Gordon than Judge Dredd or Rogue Trooper."

The usual selection of painting tools includes an air-brush, which can be set to various sizes and brushes of different types. There are also 25 fill-patterns as well as 16 colour fills. I would like to be able to customise the brushes but I suppose you can not have everything.

Drawing or painting within the program is slow, because the whole screen is updated whenever you take your finger off the left mouse button. Mostly, though, you are likely to use

PRINTING FROM COMICSETTER

ComicSetter uses the much improved 1.3 Workbench drivers, which provide faster and better printing from more printers, including a good selection of colour printers and 24-pin dot-matrix as well as 9-pin dot-matrix printers. The new drivers allow for smoothing and colour correction.

Unfortunately, early copies of ComicSetter contain a bug so that the program will not access the printer drivers, other than to eject a blank sheet of paper. Gold Disk has recalled the faulty disks, but a few may have slipped through. If you find that you can not print out your masterpiece, then you should see your dealer for a free replacement disk.

the clip art supplied. This can be used as it comes, altered on the page with the drawing tools, or loaded into the likes of Deluxe Paint to be worked over.

The clip art is of good quality in a slightly old-fashioned style, more Flash Gordon than Judge Dredd or Rogue Trooper. I suppose you could call it classic comic-book. It uses colour flat washes over simplied drawings of laser-blasting science fiction heroes and heroines, spaceships and skyscrapers. It ranges from backgrounds and figures to props and sound effects such as POW! or BLAM! in vivid comic-book lettering. At first glance, there is not much of it but there is more than meets the eye.

Backgrounds are likely to be far larger than the size of your average panel, so that one background can be clipped to provide many scenes. The props contain such useful additions as guns, doors and rocks, which can be used to create new scenes or to add variety to existing backgrounds. The figures consist of bodies separated into torsos, legs and arms, which can be joined together in dozens of different ways and close-ups of faces.

You can draw or paint on all the clip art.„Using the fill tool you can alter a hairstyle from blond to brown and vary the colour of clothes. You can also ring the changes by such methods as drawing a moustache on a clean-cut face (though not, of course, if it belongs to a heroine). You can flip graphics horizontally or vertically, which adds further variation. I wish, though, you could rotate them to any angle.

Importing clip art is easy, once you have drawn a bitmapped outline – called an object – within a panel. This can either be blank, for your own on-screen painting, or can contain imported art. In the latter case, you get a resizeable window on-screen containing the art you requested, which can be clipped in three ways. The program provides you with an outline shape which is the same size as the bitmap object you defined. You simply put it over the image you want to import, click the mouse button and – hey presto! – it appears within the panel on the page. This is the approach you would most likely use when importing a background. You can import foreground figures, by drawing a rectangle or, if it is a more irregular shape, a polygon around it.

"Each little bitmap you create can be moved around with the mouse or positioned by typing co-ordinates."

If you are creating a figure from separate arms, legs and a body, then you import them one at a time and join them together on the page. Each little bitmap object you create can be moved around with the mouse or positioned by typing co-ordinates. You do not have to be careful in cutting out the clip art to bring it into the page. The art is on a white background which ComicSetter treats as transparent. You can change this transparent colour if necessary, such as when importing some drawing of your own done against a black background.

Clip art can be re-scaled horizontally and vertically, so that you can alter the proportions of the background or of the figures. Of course, enlarging bitmapped art will coarsen it but most of the art can be blown up to twice its original size without too much degredation. You can also crop a graphic on the page. An image is normally held within the outline of a panel but you can specify that the image should extend outside the panel's boundaries, a technique which adds considerable dynamism to comic-books.

The panels themselves can be invisible or outlined in lines of various thicknesses. Once a panel, which can contain an infinite number of bitmapped objects, is arranged to your satisfaction you can "collapse" it so that all its varying parts are transformed into one piece of art instead of many, which saves on memory.

Panels, or even pages, can be saved as a bitmap for loading into other programs. On the whole, it is best to save individual panels since a page

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ComicSetter

"GOOD THINKING AMIGAMAN!!"

COMIC SETTER

continued from page 11

may be too big to load elsewhere. Indeed, when I saved a page as a bitmap, I was unable to load it back into ComicSetter because I ran into memory problems on a machine with 2.5 megabytes of RAM. You can, however, load a whole page bitmap from ComicSetter into Gold Disk's other DTP program, Professional Page.

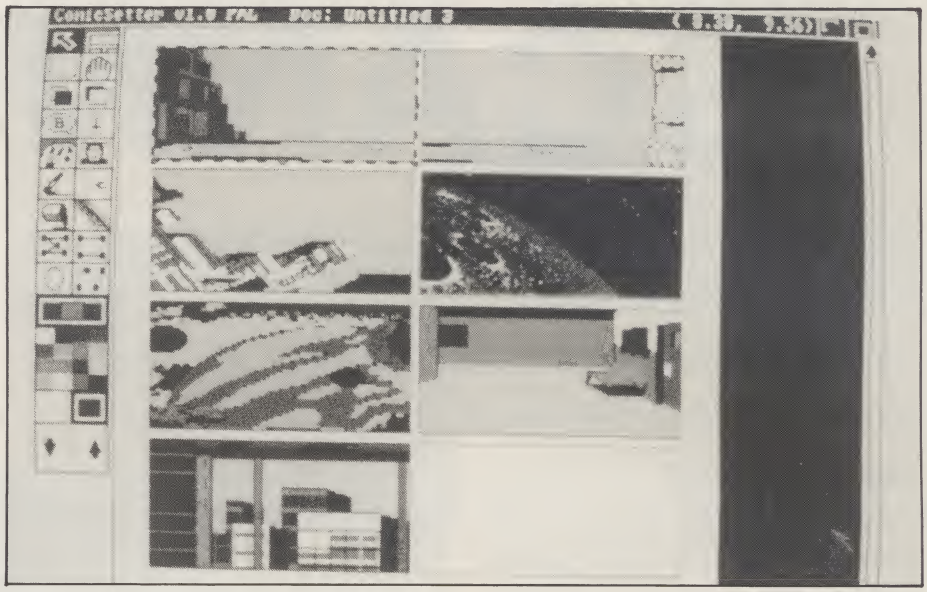
ComicSetter's on-screen palette of 16 colours can be varied by changing the Red, Green and Blue characteristics or by altering their Hue, Saturation and Luminance. You can not, however, successfully create a page that has panels with differing palettes. Although you can set up your own palette, you can not save it, which is a nuisance. To get good results, particularly when using the clip art, it is best to stick to the default colours.

"You can choose between six basic balloon shapes, from rectangular to jagged."

Text is usually put into speech balloons, although you can also type it directly on to a bitmap object. You can choose between six basic balloon shapes, from rectangular to jagged, which can be altered on the page.

ComicSetter lets you see a page at four different levels of magnification so that you can have a full page view or a 200 per cent close-up of part of a panel. It has two very useful features that I would love to see in Gold Disk's two other DTP programs, PageSetter and Professional Page. The first allows you to have several different documents in memory at the same time. You can flip between one document and another instantaneously and cut or copy and paste graphics and text from one document to another. You can also, when making a long comic book that would put a strain on memory, create a page cache. When this is done, each page is saved to disk, which means that your work is not limited by the Amiga's memory. Pages can be deleted, added, or moved around from one part of a comic-book to another.

In order to use ComicSetter you will need an Amiga with at least one megabyte of memory. The program gives a choice of using the mouse and pulldown menus or their keyboard equivalents. In a few instances you have to use key presses. Occasionally, these do not seem to work as they should. To select a panel, states the manual, you move the pointed over it while pressing the right ALT key. I found I had to press the SHIFT key as well to make it work.



ComicSetter comes on two disks, one containing the program and 1.3 printer drivers, the other the clip art but you can use it with a single drive. The PAL version gives you a full screen and works in low resolution and interlaced modes. The disks are not protected but the program uses a wretched anti-piracy system, in which you have to enter a particular word from a particular page of the manual each time you load it. I found this tedious in the extreme. Indeed, at this point, I would like to borrow Rogue Trooper's almost human machine gun and shoot Gold Disk – BUDDA! BUDDA! BUDDA! – for the things they failed to do, which would have made an excellent program superlative.

There is little doubt that the inspiration from ComicSetter comes from Mike Saenz's ComicWorks, which was released two years ago for the Macintosh. ComicSetter's screen display, with the toolbox down the left hand side of the screen, copies ComicWorks' rather than that of PageSetter or Professional Page, which is a pity. For both those other Gold Disk programs give you a toolbox on the right and an artboard to the left of your page, onto which you can move text and graphics if you decide to drastically alter your layout. ComicSetter has no artboard and it would make life easier if it did. Putting the toolbox on the right would have also made room for a ruler, which would have been helpful in judging the size of the panels as you drew them. At the moment the only guide is a readout of co-ordinates in the top right hand corner of the screen.

While it has structured graphics, ComicSetter does not use them effectively. Structured graphics have to advantages over bitmapped ones – they occupy less memory and they print at the highest resolution of your printer. That means that if you link your Amiga to a PostScript laser printer or a typesetter, structured graphics will print with perfectly straight lines, free of jaggies and smooth circles. ComicSetter, unlike ComicWorks, lacks a PostScript driver. It would be a help, too, if the program gave you the option of using a dot matrix printer's own typeface when printing. Although ComicSetter's fonts, with their handwritten appearance, look fine on screen, they do not always print well. I would appreciate some fancier fonts for adding title lettering and my own sound effects. There is no FTOOOOM!, THUD! CLUMP! or UNNNNH!, for instance and all the supplied sound effects are horizontal. I would like some vertical ones. You can view only one page at a time. Ideally, I would like to see two pages together – and even carry art work across this double-page spread.

ComicSetter's biggest fault, though, is in its otherwise comprehensive painting and draw tools. There is, I was amazed to discover, no magnify feature to zoom in and alter the clip art at pixel level. All that you can do within the program is draw at 200 per cent magnification or re-scale the clip art to a large size, draw on it and then change the scale to its original size again. This does not always work, since ComicSetter will not let you enlarge an image beyond the size of the page. If you draw on an enlarged image, the program sets its scale back to 1.00, so that you need to remember

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HANDY SCANNER

Grab yourself a piece of the action with a new hand-held scanner, says Peter Lee, who also tries to teach his Amiga to read.

THERE are three main ways of getting artwork into the Amiga: draw it yourself, digitise it or buy a disk of clip-art. The first method is probably the most satisfying for those with the time and skill to accomplish it; the second is OK provided you have a suitable camera with a macro facility for the smaller pictures and the third is the least acceptable because you find yourself making do with someone else's efforts.

Now a German company have launched a fourth alternative and one so practical and easy to use it could well rank as one of the peripherals of the year. The Cameron Handy Scanner is just a few centimetres bigger than the stnadard Amiga mouse but for a hand-held unit packs a fistful of power. With it you can easily scan any image into memory and save it to disk in the standard IFF format recognised by all the top Amiga art programs. From then on the only limitations to its use are governed by your imagination.

The immediate benefit will be to desktop publishing users who can brighten up their printed presentations with company logos, symbols and extracts from other documents. Any artist will find the scanner a great asset in providing images for incorporation into artwork.

As well as providing a large amount of enjoyment and scope for experimentation in this area, the scanner also has a more serious application in the exciting field of optical character recognition — but more about this later.

THE SCANNER

The unit under test, Scanner Type 2, is the 2-colour recognition model; Cameron manufacture a more expensive big brother, unimaginatively called Type 3, which can reproduce 16 tones to give far superior images. But for general black and white line-art or for grabbing dot-screened images (as reproduced in newspapers and magazines), Scanner 2 is just the job.

Measuring 12cm × 9cm × 2.5cm, the black plastic scanner comes equipped with a generous metre of cable which is connected to a small interface that plugs into the Amiga expansion bus. The interface sat comfortably in my Comspec RAM expansion pass-through port, jutting out by 7cm; it was also successfully tested on a Golem (Robtek) expansion. The scanner interface itself has its own pass-through, allowing other peripherals to be daisy chained alongside it (including RAM expansion modules without their own through ports). Although the scanner interface fits simply on the A500 and A1000, Amiga 2000 users should be warned that a degree of technical skill — and more realistically a lot of courage — is needed to install it in their machine. In fact Cameron disavow any responsibility for damage to the computer and/or scanner which might well result from incorrect fitting. You have been warned!

Operating the device takes a little practice to get right. A scan is made simply by holding the unit and dragging it either across or down the image to be captured. An eerie red glow is emitted from the underside when the scanner is operating and a measure of the length of the scan is calculated by the software with reference to the number of revolutions of a roller on the underside, which also allows smooth and accurate travel of the scanner. It is important to be able to move the unit at a constant, even speed across the work, otherwise distortion

creeps in. Keeping to a straight line is also a knack which has to be learned, though placing a ruler alongside your original artwork acts as a good guide-rail.

The actual width of a scan is 6.4cm with a resolution of 512 dots per line, or 8 dots per mm, which I found yielded superb results on line artwork of varying quality. Newspaper text, for example, was scanned perfectly and so too were black and white illustrations. Resolving only 2 colours (light and dark) means it is virtually impossible to capture a coherent image from a standard photograph but trial and error on the type of coarse screened pictures used in newspapers gave interesting and quite useable results and in fact the output from coloured magazine photographs was sometimes much better than I had anticipated. The main drawback is that the image scanned is magnified, so the 6.5cm width being grabbed is translated to the full width of the screen. There is no control over this feature, which I found a mixed blessing; great for enlarging small detail but irritating when I needed a same-size fit.

The scanner is also fitted with a rudimentary contrast control, though apart from experimentation with effects, I found it best to leave it set in the normal position.

HANDY PAINTER

Supplied with the unit is a graphics program tailor-made for the black and white images captured by the scanner. First the bad news — Handy Painter as supplied uses the NTSC screen format, which, I think it should be said plainly, is an insult to PAL Amiga users. Now the good news — the program uses virtual memory storage for images, so if your scan is, say, 30cm long, you can capture it all in memory and use the art program to work on all of it provided you have sufficient available RAM.

The program will work with a minimum 512K RAM but this will ultimately restrict both the size of your scans and the number of multiple art screens.

Scrolling around the picture is achieved either by well-designed elevator gadgets or better still, the cursor keys. This system has been carefully implemented to allow shape functions (circles, lines etc) to be drawn in total , even on a part of the image which is not displayed on screen. So if you overlap the screen limits with, say, a circle, the line will be continued on that part of the image you cannot see at present.

The graphic program can support up to 16 colours, using the 640 × 200 resolution mode, or interlace if you need a vertical resolution of 400 lines and can stand the monitor flicker.

The art screen has drawing tools arranged in menu boxes down the left side, with palette and brush selections available at the bottom. Some drawing facilities are accessed by clicking through a series of options on a particular menu icon; for instance the first click on the drawing tool allows dots to be drawn, clicking again gives dotted lines, another click and you can draw with a pattern brush, then finally the tool cycles round to an eraser before returning to the first option. This is a useful way of incorporating a multitude of features without cluttering up the display too much.

Despite looking at first glance like an unsophisticated give-away art package to accompany the scanner. Handy Painter contains most of the functions you will need for editing scanned images; the usual battery of shapes, filled and open, pattern fill, cut and copy, paste and invert, with a lack-lustre zoom facility which although operating at only one magnification factor at least allows pixel-perfect editing. You can also print out your screens if needed, though for some annoying reason you can only print what is on screen and not the full image as held in the virtual memory buffer.

The program comes with its own set of 35 fonts, among which are some interesting faces, all of which can be easily sized to your own requirements — though this is a feature to use with discretion as some harsh jagged edges can result in larger sizes.

HANDY READER

Optical character recognition is a technique which allows a computer to scan a document or a portion of typed or printed text and then translate the shapes of the characters it sees into text which you can edit in a word processor.

To say that today's technology is a little hit-or-miss is letting it off lightly. As far as my experience of OCR goes, the term State of the Art should be translated as "It's not very good but it's the best we can do. . . ."

The Handy reader software, which accompanies the package, requires a minimum 1meg of RAM. Text is scanned in the same way as graphics are captured and then the software will try and decipher the text image, converting it into ASCII form. Operator precision is vital here and clearly if you have not mastered a slow and even scan then the program will have an arm tied behind its back before it starts. The graphic image is displayed on screen as you move the scanner over the text and you can regulate your speed by making sure that the display shows well-defined characters.

A number of fonts which the program has been trained to recognise are include on disk and you should specify which one it should load for comparison. These include the commonly used Times Roman and Helvetica, with point size of the source material immaterial to the program's operation.

Once a scan has been captured, you instruct the program to Recognise (Sic) it. This is where the fun begins; letter by letter it will try to interpret the character shapes, printing them out on screen in an editable text file much like any word processor. If it cannot recognise a letter, it inserts the carat (x̂) symbol. I think this must be where the expression 24 carat prose comes from!

Larger sized examples of text were read far better than newspaper columns, the latter having a very poor success rate initially. The face of typewritten work proved the decisive factor, with some quality daisywheel fonts giving consistently high success rates. Press releases or reports are generally well presented, so these provided good source material unless printed on coloured paper, which affected contrast badly. Test pieces from books and magazines were unpredictable due to the bewildering number of different fonts used in the publishing industry; but needless to say the manual's pages were expertly read first time by the program with very few errors. And to the programs credit, it can cope with proportional spacing and also character kerning.

Dot matrix printouts are not recommended because of their poor quality and contrast, though I must report that my Okimate printer using thermal paper gave acceptable results.

Remember the width of the scan? It is just 6.4cm. But this does not prevent long lines of text being read, as the scanner can be used horizontally, with pages of text being read in a pass at a

continued on page 16

continued from page 15

HANDY SCANNER

time; Any overlap can be edited out from the resulting recognised text. Tedious but effective and, for the price, quite acceptable.

Perhaps the program's finest point is the ability to 'learn' new font styles under your guidance; this enables you to read in virtually any face and also paves the way for the inclusion of peculiar national characters (accents etc). Using this function you can teach the program to differentiate between the kind of things which tend to confuse it — two ff or two tt characters are particularly difficult in some fonts. Handy Reader is quick to learn and will repay the not inconsiderable effort in coaching it through samples of scanned text.

MANUALS

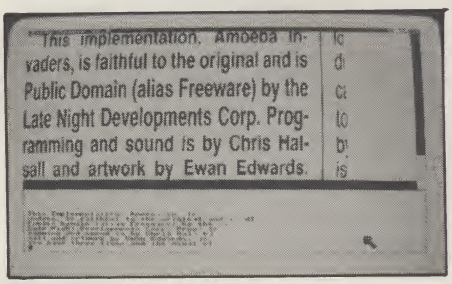
The Handy Scanner manual comes in three languages and, if the English section is a guide, inadequate in them all. It is just as well the scanner is so easy to use and the graphic program relatively simple because the instructions are Teutonically succinct. The manual accompanying Handy Reader is more useful as befits a highly sophisticated and complex utility but there are still some quaint uses of English and spelling mistakes.

CONCLUSION

The Handy Scanner is a clever and useful device which allows you to capture images into the Amiga without the need for a digitiser or video camera. Taken simply as an image grabber, the black and white Type 2 on test here has a number of serious DTP applications but not having seen the more sophisticated Type 3 scanner I can only assume its 16 colour scans will give more useful results on things such as photographs.

When compared with a digitiser your choice may well depend on whether or not you can afford a good video camera; if you can, then the great flexibility of a digitiser far outweighs the scope of the scanner. You will also need a good art package to do any professional work on your captured image, because for all its usefulness, Handy Painter is totally overshadowed by the likes of DeluxePaint and PhotoLab. If your interest lie in text recognition then the scanner, together with the Handy Reader software, is a very good introduction to a technique which has still to set the world on fire. As an experimental tool the text reader is extremely stimulating and a fascinating computing cul-de-sac. The text recognition application is intriguing and very clever but somewhat limited in its usefulness.

P.L.



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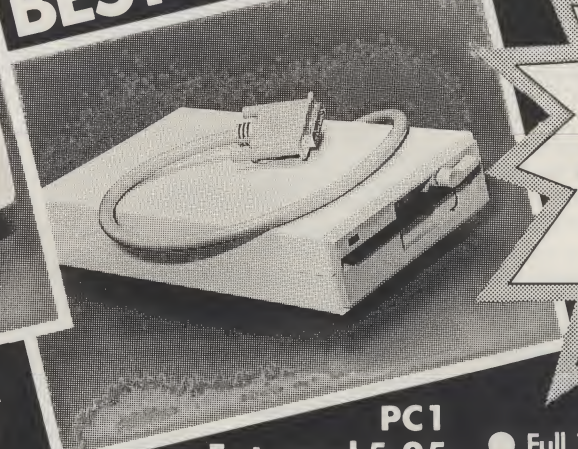

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VIRUS

Firebird

After a long wait, Zarch, the game commissioned by Acorn to show off the power of their 32-bit Archimedes computer, has made its way the Amiga. As the original publishers wanted to keep the name Zarch, Firebird's conversion has been re-named Virus but the game has remained almost identical.

The virus of the title has nothing to do with those programs that are going around at the moment corrupting everyone's disks. This virus has been developed by an alien race who are spraying it all over the land, destroying the lush green fields and trees of the countryside and leaving a barren burnt-out waste behind. In your high-tech hoverplane you must rid the land of the alien infestation and save the life of your planet.

Although solid 3D graphics have been around for a while, those of Virus are different. The standpoint is not from the cockpit of your ship, but keeps an exterior view of the ship in the centre of the screen whilst scrolling the landscape across, in and out of the screen. Two options are given for the control of the hoverplane. Using the mouse takes a lot of getting used to; one careless move can flip you upside-down and send you plummeting to your death. I much prefer the keyboard option which with its thrust and rotate controls gives the game a Gravitar/Lunar Lander feel.

A scanner in the top-right corner of the screen is your most useful piece of instrumentation. Here you can locate yourself, the aliens and the launch pad. As you approach an alien you will hear the distinctive sound of its engines, reminding you just what you are about to do battle with. Seeders are the most basic enemies to be found. They emit an ear-numbing drone as they fly but are silent once they land. These are easy prey for your cannon, but if you really find them that hard to destroy you can always let off a homing missile.

Taking out the seeders with homing missiles is not a good idea, as later levels have far more vicious enemies to overcome. Three missiles are all that you are given at the start of the game, so use them wisely! Cannon shots are limitless but cost one point per shot. Because of this and the fact that negative scores are given for shooting healthy parts of the landscape, a beginner can easily end up with a score lower than zero (not good for the ego)!

Whilst Virus has a very unusual graphic style, its gameplay reminds me of two games in particular: Gravitar because of its control method and Defender with its scanner, variety of aliens and high speed. There are some good sound effects (despite that terrible drone) but no music. Controls are responsive, the graphics move fast enough and there are some pleasant surprises lurking deeper into the game (try tracking down the sea monster). Virus is very special in that there is nothing else quite like it. Miss this and you will be missing a major landmark in computer gaming.

T.H.

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Sound: 7
Playability: 8
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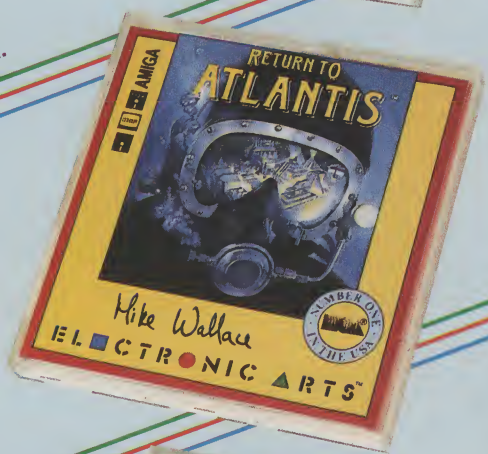

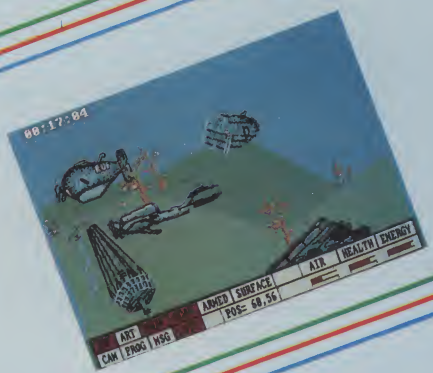

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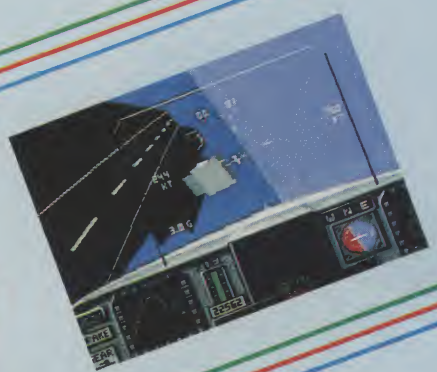

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BASIC – THE FORGOTTEN LANGUAGE?

To program the Amiga in anything but C is thought by some a heinous crime. However, Les Cooke, an experienced C programmer, took time out to look at AmigaBASIC and was pleasantly surprised.

BASIC is boring. 'C' is sexy. So they say . . . There is no doubt that 'C' is very fashionable at the moment, while BASIC, on the other hand, is considered a bit dull and hardly worth bothering with.

As with most things in life, there are horses for courses and while 'C' can be a good language for developing complex software, BASIC is more than adequate for writing small applications – especially if you are still developing your programming skills.

However, most Amiga owners will have their choice of language decided for them by forces far more powerful than fashion. BASIC is FREE but you have got to buy 'C'. It is not particularly cheap either.

There is no need to feel like a poor relation just because you have no language to use other than BASIC. The BASIC provided with the Amiga, AmigaBASIC, is a very good implementation and gives you access to many of the Amiga's special features.

When I first bought my Amiga, I ignored BASIC for three months. There were a number of reasons for this (like being astounded by the things DPaint could do) but in the main I remembered quite painful sessions typing BASIC without a proper editor (and using a 40 column screen). Sitting down on a sharp stick was less painful!

It came as a surprise, when I bothered to look at AmigaBASIC, to find that it had a reasonable editor. Admittedly its only functions are Cut, Copy and Paste but it does allow you to edit in a full-screen mode, rather than a line at a time. You probably will not think this exceptional but if you have struggled with typing BASIC on older computers you will know what a blessing this editor is. What is more, as an aid to readability, all BASIC command words are converted to upper case.

I was now encouraged to try out a little BASIC, so I looked at the manual and was further surprised to see that AmigaBASIC provides a number of features that make it potentially quite interesting. Pages 1-3 to 1-7 in the AmigaBASIC book give a quick rundown on these features.

I was interested to see that support was provided for: windows, the mouse and menus. I decided to write a small drawing program that would use these features (and some others). The program that accompanies this article is the result. The program was not written with any ideal other than to learn how to use windows, menus and the mouse from within BASIC, although in the end event (or interrupt) trapping and library calls got dragged in as well. It contains no routines to handle unexpected situations.

The segment labelled 'Main' is the main body of the program from start to finish. The first command, LIBRARY, is one of the most powerful additions to BASIC that make AmigaBASIC so interesting. I had not intended to explore this but it proved to be useful when I got to the actual drawing part of the program. LIBRARY allows you to call machine language routines from the Amiga libraries. In this case I am using LIBRARY to get at one of the graphics routines but it can be used to invoke AmigaDOS routines from BASIC as well. If you want to make best use of this command you will need the appropriate manuals.

The ON MENU and ON MOUSE commands tell BASIC where control is to be passed when either a MENU item is chosen or a MOUSE button is pressed. BASIC does NOT go to those labels when these commands are executed. The MENU ON command allows MENU choices to be taken notice of. This is required even though an ON MENU has been specified.

'Set.Screen' defines a screen in which a new window, yet to be defined, will exist. I decided to define a new screen, rather than use the existing BASIC screen, because I wanted to make sure I could use the full PAL depth from a BASIC program. This segment also sets the aspect ratio so that circles are drawn as circles, not ellipses. The value of 0.5 was found by the 'suck-it-and-see' method. Attempts to work it out intelligently failed.

'Set.Window' creates a window. Notice that the maximum width and depth must be less than that defined on the screen. No mention is made of this in the AmigaBASIC book but I assume that allowances must be made for the vertical and horizontal scrolling gadgets even though they cannot be specified in the WINDOW command.

'Set.Menu' sets the Menu Title Bars and the Menus themselves. Two blank Menu Titles had to be created in order to overwrite the existing BASIC Menu Titles in spite of the fact that I am running in a new screen. Perhaps I have goofed here somewhere.

Back in the 'Main' part of the program we come to the loop where the program sits waiting for events to happen. The loop consists of a SLEEP command and the program 'sleeps' at this spot until one of the interrupts recognised by BASIC occurs. If it is an interrupt that has been enabled, in this case a MENU or MOUSE event, control is passed to the appropriate routine. Any other event causes another iteration of the loop. It is important to note that the program does not thrash around the loop waiting for events – it sits at the SLEEP. The loop and thus the program, is terminated only when the 'quit' Menu is selected.

When the program is terminated we do our housekeeping by closing the LIBRARY, WINDOW and SCREEN and disabling the events.

cont. on next page

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BASIC – THE FORGOTTEN LANGUAGE?

What happens when a Menu item is selected? The ON MENU command has instructed BASIC that control must be passed to the 'Check.Menu' label. This is a subroutine that terminates at the RETURN command. When 'Check.Menu' completes, control is passed to the command after the one from where 'Check-.Menu' was called. Control does NOT go to the command after the ON MENU GOSUB command. When 'Check.Menu' is entered, BASIC disables any further Menu interrupts until the subroutine returns. This is to avoid unnecessary complication with recursive interrupts.

Whenever a Mouse interrupt occurs, BASIC transfers control to the 'Check-.Mouse' subroutine. Once again, BASIC now disables Mouse events until the subroutine terminates at the RETURN command. After getting the current pointer position, control is passed to the appropriate drawing tool subroutine.

'Get.Start.XY' gets the position of the pointer when the left Mouse button was pressed but before MOUSE(0) was issued.

'Box' draws a box by 'rubber-banding'. Before anything else it makes the end position the same as the start position in case the left button has already been released by the time 'Box' is entered. The position of the pointer is constantly evaluated for as long as the left button is pressed down. At every iteration of the loop, the 'rubber-band' box is drawn at a size that depends on where the pointer was when MOUSE(0) was executed. At this point I ran into trouble. On my first attempt I got lots of boxes drawn, one for each iteration of the loop. Easy, I thought. Just draw the box twice, once in foreground colour, then overwrite it in background. When the loop finishes draw it once more in foreground. This did not work either. Drawing in background clears any part of the picture already at that point.

The answer lay in using a LIBRARY CALL to get at a function in the graphics library that allows you to set the drawing mode (SetDrMd). In this case we set 'complement' mode whilst the left button is down and then set normal mode when it is released. This achieves the desired result – a rubber-banding box that does not overwrite what is already there. SetDrMd is not described in the BASIC manual. I found out how it was used by the time honoured method of cribbing what was done in another program. In this case I looked at 'ObjEdit' in the BASICDemos drawer. 'Round.Thing' and 'Lline' follow the same principle as 'Box' to draw circles and lines.

Now that I have found out a bit more about AmigaBASIC it looks as though there is more to it than I first thought. The LIBRARY command offers great potential for using the Amiga's unique features but you will need the appropriate books to get the most from it. Other interesting areas supported by AmigaBASIC are: animation, speech, sound and random access file support. So, do not pass BASIC over, give it a try. After all it IS free.

L.C.

```
REM     Simple Drawing Program
REM     To explore window, menu, and mouse features via BASIC

Main:
  LIBRARY ":BasicDemos/graphics.library"  ' open AMIGA graphics library
  WINDOW CLOSE 1                ' close BASIC window
  ON MENU GOSUB Check.Menu      ' instruct BASIC to Check Menu when Menu item
                                ' chosen - does not execute at this point
  ON MOUSE GOSUB Check.Mouse    ' tell BASIC where to go when left button...
                                ' pressed
  MENU ON                       ' enable Menu event trapping

  GOSUB Set.Screen              ' create a screen
  GOSUB Set.Window              ' create a window
  GOSUB Set.Menu                ' set up menus
  quit = 0                      '

  WHILE (quit = 0)              ' only the Quit Menu will set this to 1
    SLEEP                       ' Program sits here until any event
    WEND
                                ' only get here when Quit chosen from Menu
  LIBRARY CLOSE                 ' close AMIGA graphics library
  MENU OFF                      ' disable Menu events
  MOUSE OFF                     ' disable Mouse events
  MENU RESET                    ' restore BASIC menus
  WINDOW CLOSE wn.id            ' close window
  SCREEN CLOSE sc.id            ' close screen
  END                           ' ***********  END OF PROGRAM  **************

Check.Menu:                     ' BASIC disables Menu events now
  menu.id   = MENU(0)           ' returns which Menu Bar choice was from
  menu.item = MENU(1)           ' returns which Menu Item was chosen
  ON menu.id GOSUB Project,Draw   ' process appropriate Menu
  RETURN                        ' BASIC re-enables Menu events

Project:                        ' project Menu chosen
  IF menu.item = 1 THEN quit = 1  ' only option is 'quit' - test redundant
  RETURN

Draw:                           ' draw Menu chosen
  MOUSE ON                      ' enable Mouse events
  tool = menu.item              ' tool will indicate Box, Circle, etc
  RETURN

Check.Mouse:                    ' Mouse event occured.  BASIC now disables...
                                ' ..MOUSE events
  GOSUB Get.Start.XY            ' get position of pointer when left mouse...
                                ' ..button pressed
  ON tool GOSUB Box,Round.Thing,Lline,Fill  ' execute selected drawing tool
  RETURN                        ' BASIC re-enables Mouse events

Get.Start.XY:
  dummy   = MOUSE(0)            ' mouse functions work from when MOUSE(0)...
                                ' ..was issued
  start.x = MOUSE(3)            ' pointer x position when left button pressed
  start.y = MOUSE(4)            ' pointer y position when left button pressed
  RETURN

Box:                            ' draw box from where pointer was...
                                ' ..when mouse was pressed
  end.x = start.x               ' in case left button...
  end.y = start.y               ' ..has been released

  WHILE MOUSE(0) = -1           ' while left button down
    end.x = MOUSE(5)            ' position when left button released
    end.y = MOUSE(6)            ' position when left button released
    CALL SetDrMd& (WINDOW(8),3)  ' allows box to be dragged...
    LINE (start.x,start.y)-(end.x,end.y),1,b  ' ..without erasing...
    LINE (start.x,start.y)-(end.x,end.y),1,b  ' ..other parts of drawing
    CALL SetDrMd& (WINDOW(8),1)  ' restore drawing mode
    WEND                        ' end while left button down

  LINE (start.x,start.y)-(end.x,end.y),1,b  ' draw final box
  RETURN

Round.Thing:                    ' draw a circle
  radius! = 0!                  ' in case left button has been released

  WHILE MOUSE(0) = -1           ' while left button down
    end.x = MOUSE(5)            ' position when left...
    end.y = MOUSE(6)            ' ..button released
    dx! = ABS(end.x - start.x)   ' difference between start...
    dy! = ABS(end.y - start.y)   ' ..and end position
    radius! = SQR(dx!^2 + dy!^2) ' radius from pythagoras
    CALL SetDrMd& (WINDOW(8),3)  ' allows circle to be dragged...
    CIRCLE (start.x,start.y),radius!,1,,,aspect!  ' ..without erasing...
    CIRCLE (start.x,start.y),radius!,1,,,aspect!  ' ..other parts of drawing
    CALL SetDrMd& (WINDOW(8),1)  ' restore drawing mode
    WEND                        ' end of while left button down

  CIRCLE (start.x,start.y),radius!,1,,,aspect!  ' draw final circle
  RETURN

Lline:                          ' draw a line
  end.x = start.x               ' in case left button...
  end.y = start.y               ' ..has been released

  WHILE MOUSE(0) = -1           ' while left button down
    end.x = MOUSE(5)            ' position when left...
    end.y = MOUSE(6)            ' ..button released
```

continued on page 24

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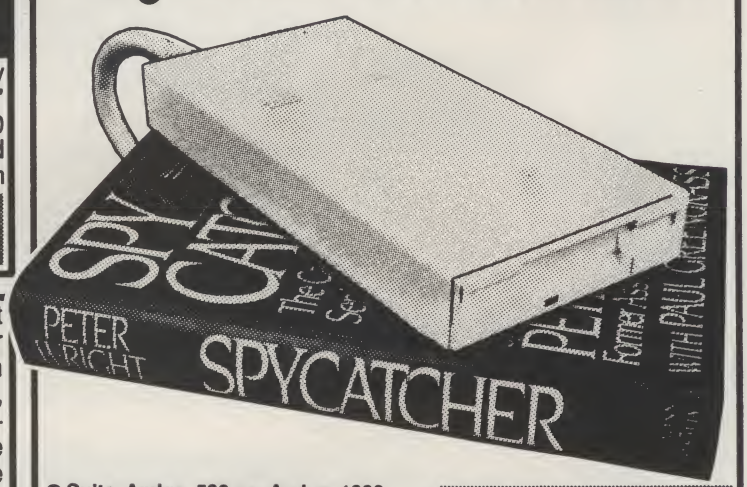

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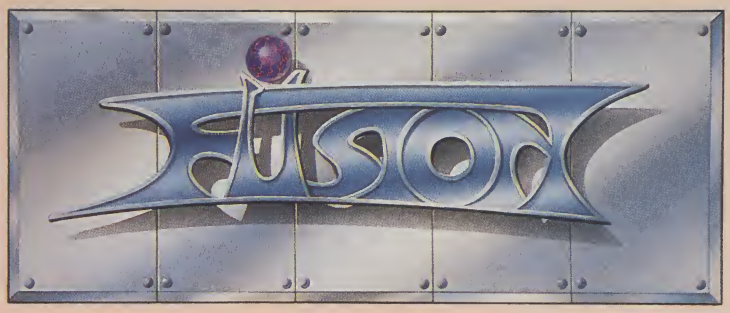
continued from page 22

```
    CALL SetDrMd& (WINDOW(8),3)  ' set drawing mode to allow line to be...
    LINE (start.x,start.y)-(end.x,end.y),1  ' ..dragged without erasing...
    LINE (start.x,start.y)-(end.x,end.y),1  ' ..other parts of drawing
    CALL SetDrMd& (WINDOW(8),1)  ' restore normal drawing mode
    WEND                        ' end of while left button down
  LINE (start.x,start.y)-(end.x,end.y),1  ' draw final line
  RETURN


  Fill:
    paint.col = 2                ' fill colour is colour 2
    edge.col  = 1                ' edge colour is foreground colour
    PAINT (start.x,start.y),paint.col,edge.col  ' fill area to edge colour
    RETURN



  Set.Screen:
    sc.id     = 1                ' screen id
    sc.width  = 640              ' width in pixels
    sc.height = 256              ' height in pixels
    sc.depth  = 2                ' number of bit planes
    sc.mode   = 2                ' high res, non interlace
    SCREEN sc.id,sc.width,sc.height,sc.depth,sc.mode
    aspect!   = .5               ' aspect ratio for circle (on Philips 8852)
    RETURN



  Set.Window:
    wn.id     = 1                ' window id
    wn.left   = 50               ' left edge
    wn.top    = 50               ' top edge
    wn.right  = sc.width - 23 - wn.left  ' right edge, allows for scroll bar
    wn.bot    = sc.height - 14 - wn.top  ' bottom edge, allows for scroll bar
    wn.type   = 22               ' type of window
    WINDOW wn.id,"Simple Drawing
  Program",(wn.left,wn.top)-(wn.right,wn.bot),wn.type,sc.id
    PALETTE 2,1!,.6,.67          ' set colour 2 to a pinkish colour
    RETURN



  Set.Menu:
    MENU 1,0,1,"Project"         ' sets Menu 1 with title bar "Project"
    MENU 1,1,1,"Quit"            ' quit selected from this Menu

    MENU 2,0,1,"Draw"            ' set menu 2 with title bar "Draw"
    MENU 2,1,1,"Box"             ' box tool
    MENU 2,2,1,"Circle"          ' circle tool
    MENU 2,3,1,"Line"            ' line tool
    MENU 2,4,1,"Fill Area"       ' area fill tool

    MENU 3,0,1,""                ' Cover BASIC Menu "Run"
    MENU 4,0,1,""                ' cover BASIC Menu "Windows"
    RETURN
```



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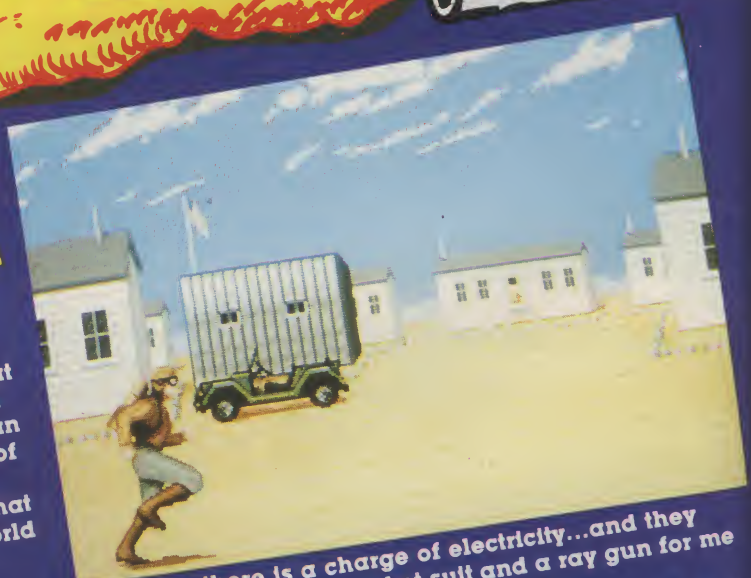
ROCKET

Andy Moss takes on the Nazis in Cinemaware's latest....

There was I, plain Tom Cody sitting at my desk at Fort Dix in 1940 contemplating the rise of Nazi Germany when all of a sudden whaam.. I get an urgent message from the future. It is from a group of oppressed scientists who tell me that because of discovering Lunarium, a substance from the moon that is used to produce deadly bombs, the Nazis won World War II! They say that their only hope is for me to prevent the transport of Lunarium to the bomb factories, and destroy the moon mining base.



Suddenly there is a charge of electricity...and they have gone, leaving a rocket suit and a ray gun for me to don and become...ROCKET RANGER.

This is the stuff that Saturday Morning Pictures was all about, only this time it is for real, can I really save the world? *(cut back to present day).*

T RANGER

So begins the epic mission of Tom (Rocket Ranger) Cody courtesy of Cinemaware software, and I can tell you that this is a real treat. There is no doubting Cinemaware's dedication to bringing out the very best in Amiga software, but with Rocket Ranger they have truly come of age. We don't just have pretty graphics and sound this time, we have a game with true depth to it, a feat that is often overlooked when display seems more important than play.

RR begins with you being notified that America's top scientist, Otto Barnstoff, and his daughter Jane have been kidnapped by the Nazis and are being transported by a giant Zeppelin airship over the Atlantic to Germany. They are there for the rescue if you want to, but is it wise to rush off in pursuit before you really know what you are in for? This is a perfect example of the depth in RR, because most of the way through the game you are at odds to decide just which course of action to take at which time.

OK, from the start you know that the Nazis have been mining Lunarium and have secret bases all over the world. Also there is a rocket base somewhere where they travel up to the moon to get extra supplies. To aid you in finding in which countries these places are hidden, you have a network of agents who you can send to various parts of the world to gather intelligence and organise resistance. The catch is their reports can only be read from Fort Dix, so flying back to base is a necessary evil. This intelligence will let you know where fuel dumps are concealed (by coincidence your rocket pack needs Lunarium too), where the five parts of your rocket are (you need to build it in order to fly moonwards) and where the secret rocket base is (doing as much damage as you can will slow down the Nazis efficiency).

Cinemaware have designed a clever anti-piracy device in the shape of the Secret Decoder Wheel. This little baby needs to be consulted before flying anywhere as your rocket pack has a self navigation system based on the exact amount of Lunarium needed to reach destination. From wherever you are, you consult the wheel and it will reveal the amount of fuel you need. Clever, huh? Once that is done, and you have mastered the take off procedure, you are free to rip in to those nasty Nazis to your heart's content. There is so much in this game, from hand-to-hand fighting with real digitised sound fx, jungle attacks on fortresses, aerial combat, through to torture at the hands of evil Colonel Whilhelm of the SS. This whole process changes each time you play it, and knowing Cinemaware's little tricks of the trade, I am sure that there are plenty of hidden screens to find along the way.

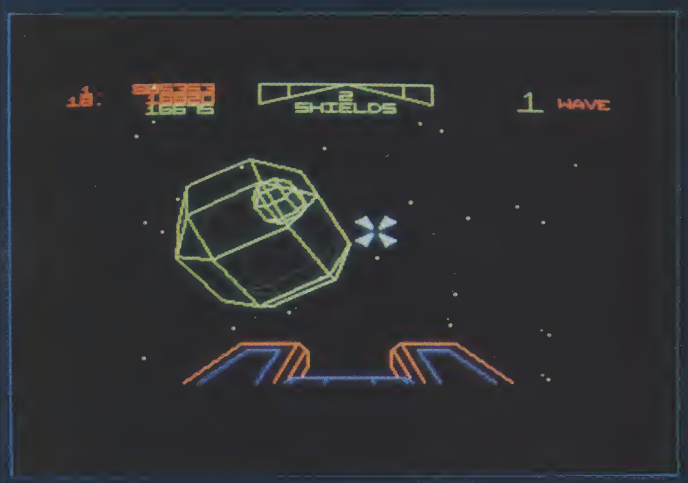
This game has been in development now for over 18 months, and although a fair amount of time was given obviously to coding the game itself, a real headache was getting it to work on the 500. Given that the game has over 1 megabyte of sound and 1 megabyte of graphics, the number of disk swaps required on a one drive system would render the game unplayable. Cinemaware have got round this problem by crunching the whole thing down so much that only 4 swaps are now needed. Allied to this, the European version of RR has been made more difficult than the American, due to Bob Jacobs admitting that in the UK our players are more skilfull than their U.S. counterparts! Another snippet of information concerns the German market, where quite rightly, Cinemaware were worried about the ramifications of using Hitler and the Nazis as subject matter. To this end, he rewrote the plot completely into a futuristic space adventure. So don't be surprised if the reaction in Germany is different, but you'll know why.

Make no mistake then, Rocket Ranger is superb, a real landmark in Amiga software history, and something that no one should miss out on.

A.M.

Price: £24.95

The Empire Strikes Back



Unlike Star Wars (the first in the trilogy of coin-ops based around the films), The Empire Strikes Back never made any real impact when it crept into the arcades. When you discover just how alike the two games are this is hardly surprising.

Nevertheless, Domark felt it worthy of conversion to the Amiga. Once again, Vector Grafix were the team give the job, so anyone who has played Star Wars will know what to expect.

Stage one involves your encounter with the Probots who are beaming pictures of the Rebel's power generator up to Darth Vader. These Probots are simple constructions, just a couple of blocks on top of each other that walk around on a pair of spindly legs. Shooting their fireballs is your first concern, then you can get on with dealing with the Probots themselves. Partly because of the Probots' basic graphics, this first section is very tedious and rather like a simplified version of the second scene from Star Wars.

After a while the Probots disappear and make way for the AT-ATs and AT-STs. The AT-ATs are large four legged creations that can be shot in the eyes or tripped by throwing tow-cables at thier legs. AT-STs are smaller two-legged aliens that are destroyed in a similar way to the AT-ATs but cannot be tripped.

Stage three is identical to the first stage found in Star Wars. Flying through space, the fighters cross your path letting off fireballs in your direction. I found this the weakest section of Star Wars, so to see it make a second appearance in the sequel is not pleasing.

The final stage follows on as you enter an asteroid belt. Your lasers are too weak to blow them out of the way, so your only option is to dodge them. Unfortunately, the vast expanses of space you see before you are contradicted by the feeling of invisible barriers as you move around. You can often see an asteroid coming from a long way off but the program does not let you move far enough away, as if you have just hit the edge of the playing area. As you might expect, this causes much frustration.

"Flying through space, the fighters cross your path letting off fireballs in your direction."

Realtime and Argonaut software have shown us recently just what can be done with 3D graphics. Of course we cannot expect every game to come up to their standards, but The Empire Strikes Back seems to run no faster than Starglider II or Carrier Command. If we are able to be given simple vector graphics there really needs to be a noticeable increase in speed to compensate.

Some of the sound effects have turned out well, though the short pieces of sampled speech are often muffled and difficult to make out. Clearly little imagination went into the creation of The Empire Strikes Back coin-op, so the quality of the conversion had to be pretty outstanding for it to make any waves. All we have in The Empire Stikes Back is a passable conversion of an outdated arcade machine.

T.H.

Graphics: 5
Sound: 7
Playability: 5
Value: 5
Price £19.99

COMIC SETTER

continued from page 13

how much you enlarged it when scaling it back to its original size. A proper magnification feature would make life much simpler.

What gives ComicSetter the edge over ComicWorks is colour. If its clip art does not match Mike Saenz's detailed monochrome Macintosh drawings, there is a lot more of it available, enough to create some terrific comics. Three two-disks sets of extra clip art have been issued at the same time as the program. Superheroes – has caped crusaders and costumed villains against high tech backgrounds; Science Fiction – adds bug-eyed monsters and Captain America-style heroes and galactic criminals.

Funny Figures – gives you cartoon rabbits – almost but not quite Bugs Bunny – together with duck, dogs and mice so that you can take the mickey out of Disney. There are also 24 funny backgrounds that range from winter scenes to jungles, as well as props such as cars, houses, doors and trees. Superheroes and Science Fiction fit in well with the clip art supplied with the program so that you can create dozens of fantasy comics. The extra disks provide some excellent close-ups of heads and eyes to add an extra beat to the rhythm of the comic-book narrative.

Funny Figures gives you the art to create a whole different style of comic, one aimed at a younger audience. Between them, they provide the means for even those who are lousy at painting and drawing to zap their friends, or even enemies, with comic books to marvel at.

ComicSetter, despite its blemishes, is as massive as the Hulk, as berserk as Slaine, as high-flying as Superman, as quick on the draw as Judge Dredd. It is a dandy of a program, a beano of fun. Creating a monster comic-book was never so easy. ZOWIE!

J.W.

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Once you have created the front and two inside panels to your satisfaction, you flip the front panel horizontally and vertically and print the page. When it is printed, you fold it in half so that the front and back panels are on one side and the inside panels are on the other side of the page. Then simply fold it in half again and you have a individually designed card.

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PD
FREE, GRATIS AND PRACTICALLY FOR NOTHING

Heavyweight stuff this month, as Stuart Williams looks at PD for programming and business.

AnalytiCalc

ANALYTICALC is a surprisingly powerful Spreadsheet, with a few extras. For those of you who do not know what a spreadsheet is, it is an electronic simulation of a huge sheet of paper which can be set up to do almost any calculation you can think of to examine costs, balance your budget, forecast profits, etc. In fact, the spreadsheet is the program which first launched the microcomputer on an unsuspecting business world.

AnalytiCalc, written by Glen Everhart of the USA, is a mammoth program which requires a 1 megabyte Amiga, Kickstart 1.2 and preferably two disk drives, (though it will work with one). It also uses an interlaced display, so be prepared for headaches, or use a high-persistance monitor . . .

The program is supplied (on Fish Disk 104) with runnable programs, documentation and source code (the last two in ARC'd form to save space). It does not support graphics or DIF file access in the current port (AnalyiCalc is apparently available on MSDOS, VMS, RSX-11M and IAS also) but does include matrix mathematics, infinite windowing, linear regression, date arithmetic, internal and external macros and many more features.

It is essential to read the manual carefully, especially since you have no redress against the author if you make a mistake and lose your data! AnalyiCalc can be recommended to the home user and those who bought an Amiga and then moaned at the price of the software but I would be inclined to stick to proven commercial product for business use, as support will be easier and you do at least have a comeback with a commercial organisation if you came across a fatal bug. Nonetheless, an interesting program, which is User Supported (alias Shareware) for a fee of a measly $10 if you find it useful.

SIMCPM

Here is a potentially useful program, if you have an old CP/M computer lurking in your gadget cupboard somewhere. SimCPM, a Public Domain program by Jim Cathey, which was ported to the Amiga by Charlie Gibbs, is a CP/M 2.2 emulator. This gives rise to the interesting thought that if you have an A1000 with Sidecar, or A/B2000 with PC Bridgeboard, it is now possible to run Amiga programs at the same time as having a PC in one window and a CP/M machine in the other! Unfortunately, SimCPM only emulates the earlier 8080 processor, so any program that uses Z80 code is doomed to failure. Most of the CP/M programs that I tried on SimCPM (after downloading via a Bulletin Board)! failed to run but if your software is old enough you may well be in luck. Just do not expect to run your Amstrad software on it! SimCPM also simulates the screen codes of the H19 terminal, which is a fairly common emulation, so installation of software which runs should not prove a problem.

SimCPM is distributed on Fish Disk 109 and is certainly worth a try if you have an old CP/M micro to hand. It will not read CP/M disks but uses the Amiga disk format; you will need to transfer software via RS232 and comms software.

DRACO

Draco is an interesting programming language, containing many features of both Pascal and C. Programmed by Chris Gray, this Shareware language compiler system is supplied on two disks, Fish Disks 76 and 77, containing all required files (except a text editor) and documentation in text file form. For those who want to go beyond Amiga BASIC but do not

want to splash out on a commercial C or Pascal compiler, Draco could prove very enticing. The 'Empire' multi-user adventure/simulation reviewed in the last PD Reviews page was written in Draco, so that should provide sufficient evidence of its power for those who would like to dabble in this powerful but unusual language.

You will need a text editor (such as MicroEmacs) to create your source code; you may already have one, or one can easily be found in the extensive Fish Disk collection, or download from a Bulletin Board.

AMIGAVENTURE

Fish Disk 41 contains a very interesting program by Mitsuharu Hadeishi, called Amiga Venture. Running in Amiga BASIC, it is a Public Domain adventure parsing system, enabling the input and interpretation of one, two or three word verbs. The parser is capable of dealing with direct and indirect objects, subordinate clauses, multiple object processing, automatic ambiguity resolution and adjectives.

If you have a desire to write text based adventure games from within BASIC, this could prove a useful basis for your work, especially if you have a BASIC compiler such as the excellent commercial offering, AC-BASIC, which would let you produce stand-alone adventure games. Whether these games would be of commercial standard would depend on your programming ability but AmigaVenture could help the accomplished BASIC programmer to produce games which, while unlikely to rival the gems from Infocom, could be of interest to the budget market.

GOTHIC

One for the collector of antiques though Gothic it may be (it has appeared in various forms on many machines including minis and mainframes and especially CP/M and MSDOS, over several years), it is nonetheless effective. Basically, it takes your text input and outputs huge banners consisting of words make up of various printer characters; as you might expect, these are output in a 'Gothic' style (a kind of pseudo Old English), printed down the page instead of across.

A printer with continuous feed capacity is essential to use Gothic properly and it would be useful to be able to set the printer to condensed mode if you have an 80 column printer, as Gothic outputs up to 132 columns to make up its huge character set! Those with wide printers may produce even larger results.

Gothic is one of those programs which you can't conceive of a use for until you have tried it. Very handy for banners for the local school fete!

Gothic for the Amiga is available on Fish Disk 3, along with a number of other goodies, including versions of Forth and Lisp and is Public Domain.

S.W.

All of the above Public Domain software was supplied by George Thompson Services of Arran. (0770 82) 234.

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Digiview is probably responsible for the majority of Digitised HAM pictures in circulation at the moment. Lee Gibson explains why and takes a look at their latest software upgrade.

For anybody out there that has not heard of Digiview here is a brief overview of this software/hardware combination. Digiview from NewTek is a high quality video digitiser. It comprises of a small hardware unit, software, a perspex colourwheel and, of course, a user manual.

A video digitiser allows you to scan video images into the Amiga. Once captured, the images can be processed and saved to disk or saved as a 'raw' unprocessed file. Saving to disk is in the IFF format which allows these images to be loaded into paint programs such as DPaint II, Digi-Paint or any IFF compatible programs.

The input images for the digitiser can

be produced via a black and white (security-style) camera, a colour camera (ie domestic camcorder) or a video tape/disk player. For most uses, people will plump for a B/W camera. These are relatively inexpensive and, due to their higher resolution than colour camcorders, usually give better results. If you think that you cannot digitise in colour with a B/W camera, then you are wrong. The colour wheel provided allows colour images to be built from three scans of the subject, one for Red, then Green and finally Blue.

There are currently two types of video digitisers on the market they are: frame grabbing digitisers (flash) and successive approximation. Digiview is the latter kind. Flash digitisers will capture images (some in B/W, others in colour, depending on the model you purchase) from the source at a very fast rate (25 frames a second in some cases). The results, however, tend to be very grainy and are not usually of a very high standard. Digiview does not grab images in realtime and is quite slow. The images it produces, however, are of a very high quality and far exceed the quality of those obtainable with flash digitisers at the current time.

SETTING UP

Setting up DigiView is very easy and is detailed in a step-by-step guide in the manual. The four-colour perspex wheel must be fitted to the camera (if you require colour digitising). The hardware is plugged into the parallel port (make sure the Amiga is switched OFF!) at the rear of the Amiga and the video cable from the video camera (not supplied) is plugged into the hardware. You can now turn on the Amiga and load the DigiView 3.0 softoware. Once loaded previous 2.0 users will come across the first difference, the title screen has changed and so have the pre-load options. In version 2.0 there were options for selection of display mode ie Lo-Res, Med-Res, B/W etc. Now the user is presented with a 3D style gadget driven options list. From here the user is able to select:-

Interlace	**ON/OFF**
HiRes	**ON/OFF**
Vertical Overscan	**ON/OFF**
Horizontal Overscan	**ON/1/2**
Colour	**ON/OFF**

The gadgets marked 1 and 2 are for selecting one of the two available overscan sizes in the resolution you have selected. This new layout really only

shows us one new feature of 3.0 and that is the overscan support. This much asked for feature is welcomed, although I would have preferred to have had control over overscan size instead of just two presets to choose from. The two presets are suitable for most instances of overscan requirements but not all. PAL and NTSC page and overscan display sizes are supported in the same program.

After selecting the required display mode you are taken into the program proper. Digiview works on an easy to use menu system. All the menus are the same as for 2.0 but once selected these work differently in two or three instances.

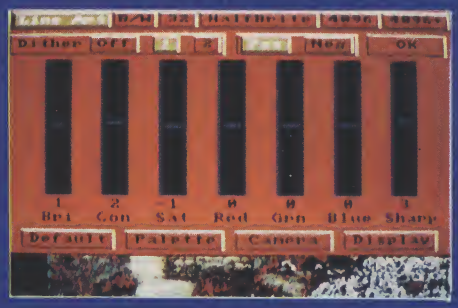
There is nothing new in the project menu, ie we have:-

New:- ***Clears a picture.***
Load:- ***Load an IFF image saved previously.***
Save:- ***Save the currently displayed image in IFF format.***
SaveRGB: ***Save full 7 BitPlanes Image NON IFF format.***
Load Palette:- ***Load an IF palette already defined.***
Print:- ***Dump displayed image to printer.***
Histogram:- ***A graphed view of image intensity.***
About:- ***Info on Digiview.***
Quit: ***Exit program.***

All of these functions operate in exactly the same manner as their version 2.0 counterparts.

The next menu we come to is the 'Digitise' menu. This is the one we use to actually take in images from our source. There are three selections: Red, Green and Blue. We use each of these

VIEW 3.0



in turn, at the same time ensuring we have the correct colour in front of the lens. The colour image is then built from the three scans once we select 'Display'. In the manual it states that if you own 'DigiDroid' is attached and only gives the Auto ption if this is the case.

The third and final menu is the 'Controls' menu which comprises:-

Colour:- ***Allows user to select image process and display characteristics ie HAM, enhanced HAM, 32 Colour etc.***

Palette:- ***Allows palette changing and colour freezing.***

Camera:- ***Allows adjustment of image width, tracking, centering, one of three scan modes and display size ie half, full and quarter.***

Motor Cal:- ***Again for 'DigiDroid' owners, this is for calibrating the motor. This option only appears when 'DigiDroid' is connected.***

Within the requester that pops up when you select **'Colour'** are two new display options. They are:-

HalfBrite:- This mode allows the Amiga to display 64 colours (instead of 32) in a Lo-Res screen, giving a better result than the standard 32 colours on non HAM images. Halfbrite mode is a hardware facility afforded by the Amiga. There is a reason why you may not have hard of Amiga Halfbrite. The early A1000 Amigas did not have EHB (Extra Half Brite or Halfbrite mode) therefore early software did not support it. This is slowly changing as more packages support EHB. If you own an early A1000 you may not have EHB mode in which case you will only get 32 instead of 64 colours in this mode. The EHB mode is also supported in the palette selection of Digiview by showing 64 instead of 32 colours.

Line Art:- This mode allows line drawings to be digitised and then automatically converted to B/W for further work in DPaint. In version 2.0 you would have to digitise the image and remove all the unwanted colour gradients manually. This is a real time saver if you use a digitiser as a guide-line for artwork and you only required outlines.

SUPPORT PRODUCTS

There are some new support products available for Digiview which you may be interested to learn about. Available from Newtek is a copy stand for camera mounting and easy adjustment. Also 'DigiDroid'. This little unit is mounted on the Digiview colour wheel and automatically drives the wheel to select the correct perspex colour for digitising. A camera suitable for Digiview. A 'Gender Changer' to allow you to use Digiview on an A5000 or A/B 2000, although I think this is a bit pricey as I made mine for about five pounds by adapting an RS232 converter.

One of the major setbacks with successive-approximation digitisers is the fact that you need three scans (R, G & B). digitising in colour from, say, a video tape player is not possible, although you can do B/W images in a singel scan. This has become less of a problem if you are a Genlock owner as a company called Pure Graphics have designed a piece of hardware called 'CombineR.GB' which when attached between Genlock and video player allows Digiview to digitise in glorious colour. This alleviates one of the major drawbacks of Digiview in my mind.

CONCLUSION

These, then, are the new features of version 3.0 over 2.0. To summarise we have:-

Overscan support.
Support for Extra Half Brite mode.
Line Drawing Display mode.

Any upgrade to a new version has got to be a good thing (even if the reason is only bug fixes). Version 3.0 of Digiview provides some useful new functions. There are still a few small additions that would take Digiview from the very good to the excellent category. Perhaps we may see these in 4.0, who knows?

Price £149.95 L.G.
Contact: Digipro Ltd. Enterprise House, Howards Grove, Shirley, Southampton SO1 5PR. (0703) 703030
USEFUL INFORMATION – Pure Graphics. (01) 358-0663.

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Screenshots taken from ATARI ST.

Screenshots taken from SPECTRUM

Quad

Sample the delights of Giulio Zicchi's latest QUAD feature — an IFF sampled sounds player.

This month we are going to take a further look at sound re-production on the Amiga. Although I did touch on this briefly in a previous article, this example provides a way of quickly hearing an IFF sampled sound from the CLI without first having to load an application program such as Audio-Master etc.

Let us first take a look at a specimen dump of an IFF sampled sound file.

```
0000: 464F524D 00001A78 38535658 56484452   FORM...x8SVXVHDR
0010: 00000014 00000000 00001A18 00000020   ................
0020: 20AB0100 00010000 4E414D45 00000014    .......NAME....
0030: 4D494450 4E4F0000 00000000 00000000   MIDPNO..........
0040: 00000000 414E4E4F 00000014 41756469   ....ANNO....Audi
0050: 6F204D61 73746572 00000000 00000000   o Master........
0060: 424F4459 00001A18 FFFF00FE FF00FF00   BODY............
0070: FF00FF00 FF00FF00 FF00FF00 FF00FF00   ................
```

All IFF files start with the ASCII identifier FORM, LIST or CAT. The second four bytes are the file length which we use to allocate the correct amount of memory from the system.

These are followed by two more 4 byte ASCII ID's, the first telling us that this is an 8 bit sampled sound file. If we skip on to the BODY chunk ID, you will notice the following long word, value $00001A18. This is the actual byte size of the sample which follows. By dividing this value by two we have the word length for the hardware register. These 'chunks' of an IFF file should be scanned for by size and un-wanted chunks should be skipped. In this example however, I am merely checking for the relevant ID's at the beginning of the file and then scanning down in a loop for the 'BODY' chunk. Whilst this technique will win no programming prizes, it does serve to keep the program examples short. Should you wish to read up on the IFF standard and the correct reading/writing procedures then the EXEC manual will reveal all.

Looking back at the example now, you will notice that the first thing we do is to push a couple of registers on to the stack. This is because a program that is called from the CLI will have passed to it, by AmigaDOS, a pointer to the command line and the length of it in A0 and D0 respectively. These are stored since we need to open the DOS library first. If all is well then the pointer and the length registers are pulled back off the stack and used to open the file. Take note of the line which zero terminates the ASCII in memory. When you press return after typing in a CLI command the actual line in memory is terminated with a carriage return ($0A). AmigaDOS requires a null terminated string for a file name and so this line takes care of that problem first. The rest is fairly straightforward stuff, including the memory allocation and de-allocation but there are several points to note about this month's program.

Firstly, the upper limit imposed on the length of a sample played back under DMA control is 128 kbytes. Samples longer than this will tie up the 68000. Should you wish to play back longer samples, then after the second IRQ wait you should hit the AUD0LCH register with the new location which will be . . . 128 kybytes on from the start point.

The hardware register defines at the top of the program are current and are subject to change as are all the sytem include definitions.

Please note that a TST.L D0 should be used when testing for errors such as library not present (!) or memory allocation testing. In previous examples I have used TST D0 which defaults to word testing and will cause problems if ever D0 returns a number on a 64k boundary. My thanks to Laurence Vanhelsure for pointing out this oversight on my behalf.

G.Z.

```
                incdir  "sys:include/"
                include exec/exec_lib.i
                include exec/memory.i
                include libraries/dos.i
                include libraries/dos_lib.i

AUD0LCH         equ     $dff0a0
AUD0LEN         equ     $dff0a4
AUD0PER         equ     $dff0a6
AUD0VOL         equ     $dff0a8
INTREQ          equ     $dff09c
INTREQR         equ     $dff01e
DMACON          equ     $dff096
```

cont. on next page

Quad

continued

```
        movem.l d0/a0,-(sp)             ; save file length, location
        lea     doslib,a1               ; library to open
        moveq   #$00,d0
        callexec        openlibrary     ; call open routine in ROM
        tst.l   d0                      ; got library ?
        beq     no_library              ; no pull regs. and exit
        move.l  d0, dosbase             ; store library base
        movem.l (sp)+,d0/a0             ; retrieve length, location
        move.b  #$00,-1(a0,d0)          ; zero terminate
        move.l  a0,d1                   ; location to D1 for DOS call
        move.l  #mode_oldfile,d2        ; existing file
        calldos         open            ; open
        tst.l   d0                      ; file problems ?
        beq     file_error              ; yes - exit
        move.l  d0,file_handle          ; else store handle
        move.l  file_handle,d1          ; handle to D1 for DOS
        move.l  #buffer,d2              ; memory to load into
        move.l  #$10,d3                 ; no. of bytes to read
        calldos         read            ; read into memory
        cmp.l   #'FORM',buffer          ; is this IFF ?
        bne     not_iff                 ; no - exit
        cmp.l   #'8SVX',buffer+8        ; sampled sound file ?
        bne     not_soundfile           ; no - exit
        move.l  buffer+4,d0             ; size of file for allocmem
        move.l  #MEMF_CHIP,d1           ; must be in chip memory
        callexec        allocmem        ; try and claim memory
        tst.l   d0                      ; got it ?
        beq     no_memory               ; no - exit
        move.l  d0,membase              ; yes - store address
        move.l  file_handle,d1          ; now load into memory
        move.l  membase,d2              ; at this address
        move.l  buffer+4,d3             ; number of bytes to read
        calldos         read            ; perform disk read
        move.l  membase,a0              ; IFF info starts here
        move.l  #'BODY',d0              ; ascii for match
        move.w  #$40,d1                 ; search for 64 long words
body_loop
        cmp.l   (a0)+,d0                ; compare current


        beq     body_found              ; branch if found
        dbra    d1,body_loop            ; decrement count - branch
        bra     de_allocate             ; not found - get out
body_found
        move.w  #$80,intreq             ; clear Audio1 IRQ bit
        move.l  (a0),d0                 ; A0 points to length
        lsr.l   #1,d0                   ; divide for word length
        move.w  d0,AUD0LEN              ; length
        add.l   #$04,a0                 ; increment for start point
        move.l  a0,AUD0LCH              ; set location
        move.w  #428,AUD0PER            ; frequency
        move.w  #$40,AUD0VOL            ; volume
        move.w  #$8001,DMACON           ; enable Audio1 DMA
IRQ_wait1
        move.w  intreqr,d0              ; ignore first interrupt
        btst.b  #7,d0
        beq     IRQ_wait1
        move.w  #$0080,intreq
IRQ_wait2
        move.w  intreqr,d0              ; wait for second interrupt
        btst.b  #7,d0                   ; bit 7 = Audio1 IRQ
        beq     IRQ_wait2               ; not lit so wait
        move.w  #$0080,intreq           ; now clear bit

        move.w  #$01,DMACON             ; stop Audio1 DMA
de_allocate
        move.l  membase,a1              ; de-allocate memory
        move.l  buffer+4,d0
        callexec        freemem
no_memory
not_iff
not_soundfile
        move.l  file_handle,d1          ; close file
        calldos         close
        bra     exit
no_library
        movem.l (sp)+,d0/a0             ; retrieve regs. on lib_err
file_error
exit
        rts                             ; exit to CLI


doslib          dc.b    "dos.library",0
                even
_dosbase        dc.l    0

buffer          ds.b    16
                even
file_handle     dc.l    0
```

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DSM 68000 DISASSEMBLER

There are numerous 68000 disassemblers around but few, if any, produce output that could be re-assembled, edited and run. Simon Benvenutto tests one that does.

Do you want to fix or improve a program, checkout or optimise your compiler's output, or simply disable copy protection? Then, according to OTG, you need DSM, their Amiga disassembler. OTG warn us about disassembling software whose licence specifically forbids it and about safeguarding the disassembled source to copyrighted programs. If in doubt, we are advised to "consult an attorney" (that is American for lawyer). Dare I even review this product? Do **not** place in the public domain or sell anything incorporating any portion of anybody else's disassembled code, particularly copyright code. These days you can get sued for copying an icon!

DSM comes on a single disk, with a 50 page manual in a three ring binder. As well as the DSM program, there is utility called **ATEM**, which performs the same function as **ATOM** but on executable rather than linkable files. The manual is clearly written and gives an overview of how DSM works. The only thing that annoyed me was the registration card, which asks for age and income. Is this really necessary?

DSM is run from the CLI and requires a minimum of 512K RAM. Output is written to disk and can be 5 to 15 times the size of the executable file. Since DSM cannot split its output across multiple disk volumes, you may need a hard disk to disassemble very large programs. However, DSM can split its output into various files. The user can determine the maximum size of each file and DSM will embed include statements to link the files together. While processing, DSM builds temporary files on the RAM disk. This further increases its use of RAM since there is no way to place these files on another device. On a 512k system, I was unable to disassemble a particular file of less than 32k because the RAM disk was full. The size of the temporary files also depends on the complexity of the code. Although the manual gives no estimates for RAM usage, it implies it will be similar to the output file size, so beware.

Like most disassemblers, DSM does not always get it right. If a piece of code is reached indirectly, such as through as indexed jump, DSM has no way of knowing it. To improve its performance under such circumstances, an "expert system" can be invoked. Although this option undoubtedly improves disassembly, some fragments of code still get disassembled as data. However, you can force it to disassemble certain code fragments by giving DSM a file of offsets which are known to be code. Since there is an option to get DSM to print offsets with the disassembled code, this is not too difficult.

DSM assumes you are using the standard Amiga assembler (that is Metacomco's assembler). Certain directives might not be compatible with your assembler. For example, DSM uses S (short) and L (long) as the branch specifiers, where as other assemblers use W (word) or no specifier for long branches. Unfortunately, there is no option to customise DSM. You will have to edit the output file. The existing version does not support 68010 or 68020 code. However, few will find this a limitation. Neither can it read linkable (ie: object) files. These will have to be put through the linker first.

DSM is fast and reliable: while I used it, it did not guru on me once. Its main problem is it is greedy. A Megabyte of RAM is almost a necessity, as might be a hard disk. The expert system option could be improved: I would prefer it if DSM disassembled too much rather than not enough code. However, the offset file helps to improve disassembly although it involves the user in some extra work. One thing I would like to see is the ability to disassemble code in memory such as the ROM kernel. Then maybe I could work out how to get an AnimObj off the Animate list! But for those who need to disassemble large programs and who have the hardware, DSM will do the job.

S.B.

Price £49.95
Contact: Digipro Ltd, Enterprise House, Howards Grove, Southampton, Hampshire SO1 5PR. (0703) 703030.

★ Program Submission Procedure ★

DO NOT submit any program or routine that you do not either own or have property authority to do so.

ALWAYS include your name, address and the date on all material and any enclosures.
Do not forget to make it clear exactly which computer/s your program or article is applicable to.

Include ROM or DOS versions wherever they are pertinent.

If you have to submit work which is hand-written then you must make sure it is printed clearly.

Number all pages.

Never use staples. Use paperclips if necessary.
If you are saving your program to tape then save it AT LEAST twice on each side.
When you save a program on disk save it twice and call the second file "BACKUP".

Remember to label all tapes and disks with your name and the title of the program. Label tape or disk with your name and the name or title of the program.

Always ensure that disks are well packaged. They should ideally be sent in a commercial disk mailer or at least packed between two pieces of hardboard or rigid plastic.

Please allow at least 8 weeks for acknowledgement as all programs have to be thoroughly tested and made into a suitable format.

Enclose a self-addressed stamped envelope or package if you would like your program to be returned.

★ Programming tips ★

If you can, use CHR$(x) type commands instead of those hard to read graphic symbols.
If necessary renumber your program on completion a many readers use auto number utilities to ease typing in.

Try to keep instructions within the program itself at a sensible level. You can expand on them within the accompany text if necessary.

TEST your programs before submitting them or even better get a friend to test them for you.

If a program contains machine code data please use decimal and not hex as there are fewer digits to be confused. Try and keep the same number of data statements in each line. Please add some form of error checking if your program contains more than five lines of data.

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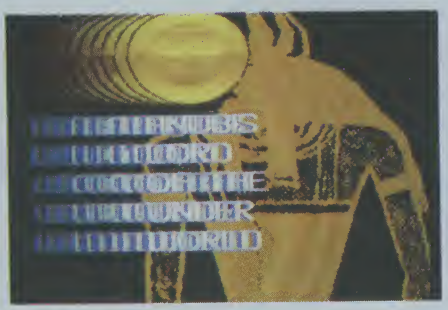
ANIMATION ANIMATION

Plane and simple — Peter Lee draws his conclusions from two animation programs for the specialist user.

HASH Enterprises are continuing to expand the Amiga's video horizons with the release of two additions to their well-known Animation suite of programs.

The Amiga has found a friend in Martin Hash, who has already established his company with a string of useful and moderately-priced animation packages — Apprentice, Stand and Effects being the best known.

Although his software aims more at the professional application, it is still an economical way for any home enthusiast to build up a library of effects with which to add a touch of class to their own video work. That is not to say everything is a bed of roses and the major new release — Animation: Multiplane — is far from the doddle to learn which the Hash publicity may claim!



MULTIPLANE

The program is described as a Digital Composition and it mimics the familiar animation technique of having two distinct planes — foreground and background — which are combined for the completed cell of animation. In the movies they do this by sandwiching together pieces of artwork drawn on acetate sheets and on the Amiga it is done by stamping the foreground plane into the backdrop.

By having the foreground image animated a cell at a time, it can appear to move over a static background when played back in real time. This is not, however, the whole story, as several unusual effects are implemented to bring the most out of the technique and increase the value of the program. For instance, it is possible to dissolve one animation into another to create a subtle transition.

As you would expect from an integrated suite, the program can use any of the animation routines created on other Hash utilities and some third party software, to create composited animations. The user interface has been well designed by the program's author Mitchell J. Hurst, the mouse beng used to control all the functions apart from some keyboard entries. However, it is supported by the kind of Hash manual which, like the British summer, is brief and cloudy. Thankfully there are some examples in disk to help you understand exactly what is going on.

The building blocks of the animation are defined in the choreography — another name for the scripts which will be executed. These are composed of instructions for a particular cell, or series of cells and any of the transitions — for example movement of a foreground object — are controlled from the digital effects window; each effect in a script is specified by a Channel which has a user-selectable value and which is displayed on a line graph; on one axis you have the intensity of the effect, along the other the frame span.

Display is in the PAL format and the effects available include: colour control, brightness, contrast, polarisation, offsets, motion blur/strobing, drop shadows, wipes, dissolve and pixelation. By using the channel control you can spread an effect in say a change in colour — over a number of frames for gradual transition.

In particular the dissolve and motion blur are very effective, the latter giving a high quality effect of rapid movement of your foreground object (text

FLIPPER AND MULTIPLANE

or graphic) by leaving a gradually fading patent image behind as it moves around the screen. Dissolve can be used to great effect by having a foreground image gradually appear from a background picture. But I found the blur command totally innovative and probably the most striking feature of the program. As a point of interest, you do not need a background at all; using just one plane can be effective over a black screen and all the effects are still available.

Having created your new choreography, you may choose to see any frame within it, either as a composite or simply showing the foreground or background components. When everything has been done to your satisfaction it is time to record the finished work to disk. This is likely to take some time for anything but the simplest images, as the program assimilates the effects and creates a composite cell, stamping the two images into one; then using one of two compression techniques it builds up the number of frames you have created, saving them into their own disk directory. While all this is happening you may as well find something useful to do for an hour or so and, provided you have enough room on the disk, come back to a completed sequence. This choreography can now be played back by exiting Multiplane and starting the Player program from Workbench, when the fruits of your labour can be appreciated, with speed control available via the function keys.

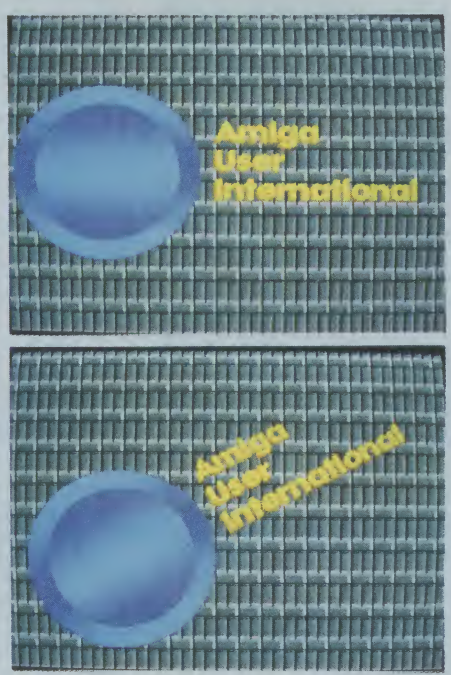
The program comes on a single disk which cannot be copied; however, using the key-disk principal a backup of the original can be used provided the master disk is inserted for a moment when requested, making hard disk installation possible. The program requires at least 1 Meg of RAM, advises 2 drives and works on any of the Amiga family.

FLIPPER

This Hash program has been around for a while but has now been released as version 3.0; it is a very simple idea with no frills but an elegant little utility. Flipper allows you to flip through a series of screens to test animation sequence. Typically the artwork will have been drawn and saved using an art package, with any movement drawn on subsequent screens. The major advantages of the program are that it will work in any PAL resolution (including HAM) and compacts screens before saving them for layback).

The user interface is spartan but it does feature the nice ability to specify a whole batch of frames from a disk directory at one go and then create your loading script from that. Then all you have to do is decide on the amount of time any frame is displayed on screen.

The program really comes into its own when used with other animation: items, allowing you to edit IFF pictures saved by them before a quick run-through in Flipper. The program is also useful for pencil and paper animation artists who can digitise their work, pack it and see it animate



on the computer. The only restriction laid down by Flipper is that each frame must be in exactly the same resolution.

The manual really cannot go far wrong with such a simple product and, like Multiplane, the program requires at least Meg and two drives are advised for efficient use.

CONCLUSION

Animation: Multiplane is a specialist program with enough unusual features to make it a worthwhile addition to a video designer's collection. However, casual animators might find it too constrictive and initially difficult to master. As part of a suite on dedicated programs it fits in very well but as a stand alone utility it does not have too many variations on the one composition theme. Why the company spend so much on making a well produced manual and then skimp on the actual contents is beyond me. The program deserves better because the software is well-designed and produces some novel and effective short bursts of animation. Flipper, on the other hand, has no effects and simply shows a set sequence of graphic frames. As a test utility it is moderately useful, though certainly not a must-have for most computer animators.

Price: Animation — Flipper £42.00
Animation — Multiplane £42.00
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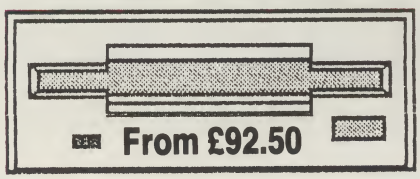

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Access

Amiga Answers

More Amiga Answers from Yuri Large, the Amiga User Group's Technical Whizz-Kid.

Dear AUI,
I am writing to you because I would like to ask you three questions. The first regards the review of the OKIMATE 20 printer back in the May issue. I own an Amiga 500 and I bought that printer recently. I have been very impressed with the printer so far, but I would be very grateful if you could supply me the address of where I might be able to obtain the "filezap" program, which the reviewer mentions in it, because I have not been able to find it.
My second question is, are there any books you can recommend to me, which will show me how to incorporate graphic files (from programs such as "Deluxe Paint") and sampled sounds into my own AmigaBASIC program?
Finally my last question is there a compiler available that will compile AmigoBASIC programs and if so where can I obtain it from? Thanks a million for any assistance.
Yours faithfully
PAUL JENNINGS, GIBRALTAR

Dear Paul,
The latest version of the file editing utility Filezap is called Newzap and appears on Fish Disk 58. This is available, as are all the Fish Disks, from the UK Amiga Users' Group at: 66 London Road, Leicester LE2 OQD.
I do not know of any books that cover the subject of using IFF files in AmigaBASIC. However, if you take a look in the BASICDemos drawer of your Extras disk you will find two programs called "LoadILBM-SaveACBM" and "LoadACBM". ILMB and ACBM are two graphics files standards. ILBM stands for "InterLeaved BitMap" and is the IFF standard for graphics files. ILBM files are used by Deluxe Paint, Photon Paint, DigiPaint, etc. ACBM stands for "Amiga Contiguous BitMap", this type of graphics files is used with AmigaBASIC. The reason for this is that ACBM files are quicker and easier to manipulate from AmigaBASIC. The two programs in the BASICDemos drawer that I mentioned show you how to load both ILBM and ACBM graphics files and display them on screen. Both programs are well documented and should be a lot of help to you. LoadILBM-SaveACBM also allows you to convert all your favourite ILBM files into ACBM files for use with AmigaBASIC. As well as these two programs, there is a PD program called "BrushtoBob" which allows you to convert IFF brushes into bobs (blitter objects) for use with your AmigaBASIC programs. It appears on the UKAUG's AmBa (AmigaBASIC) Disk 3.
Finally, there is an AmigaBASIC compiler available from AB Soft. It is called AC-BASIC and is available from any good Amgia software stockist. AC-BASIC will compile all AmigaBASIC programs with good results in both execution speed and size. Apart from AC-BASIC there are some excellent compiled BASICS already available for the Amiga. Take a look at True BASIC or F-BASIC, if you are interested.

Dear AUI,
I am thinking of purchasing a B2000 for its expansion capabilities in the future. I have 3 queries which I hope you can answer:
1. I gather that the A500 with 512K expansion will not run some programs until the extra RAM is switched out. Will these programs run on a 1 Meg B2000?
2. Are there any limits on the number of internal drives you can install on a B2000, i.e. can you have 2 x 3.5" drives, a 5.25" drive with bridge board and an internal hard disk?
3. Is there anything that can be done on an A500 which is not possible on a B2000?
Yours faithfully
STEVE SEXSTONE, KENT

Dear Steve
1. As you say some programs will not run with Fast memory. However, all the latest programs should have no problems. There are, as I mentioned last month, a couple of things you can try if you experience any problems, so the drawbacks of having a B2000 are minimal.
2. The B2000 can only have 2 x 3.5" floppy drives internally, as al other floppy drives for use with the B2000 must go through the external drive port. It can also have the 5.25" drive for the Bridge Board and a hard disk fitted internally. The only problem is that the A2092 Hard Disk for the B2000 is designed to fit in the place of the B2000's second floppy. This problem can be overcome by mounting the hard disk somewhere else in the B2000's case. However, to do this requires a small degree of bodging but as long as you are a little handy at DIY this should not present a problem.
3. The only thing you cannot do with a B2000 that you can do with an A500 is use peripherals designed to fit on the A500's expansion bus. However, most A500 peripherals are available in card form for the B2000.

Dear AUI
I have recently bought an Amiga 500 and I am now thinking of buying a modem. I have never used a modem before so I have a few questions to ask you:
1. What does the V21, etc. mean?
2. Will the modem plug straight into a new style BT phone socket?
3. What is Hayes?
I hope you can answer some of my questions.
Yours faithfully
K. TAYNTON, HANTS

Dear K. Taynton
1. V21 is one of the baud rate standards used for telecommunications. V21 is

cont. on next page

continued

300 baud transmitting and 300 baud receiving at full duplex. Full duplex means data can be sent and received simultaneously. However, there are lots of other different standards.
2. Almost all modems for sale in the UK are designed for use with the new style BT phone socket. Therefore, you should have no problems finding a suitable modem.
3. Hayes is a command set used by modems. It could almost be described as the language used to program modems. All communications programs for use with the Amiga use the Hayes command set. When buying a modem it is therefore important to make sure it is Hayes compatible, otherwise you may find that you will need to write your own software. An example of a Hayes command is "AT", which is used to bring a Hayes-compatible modem to attention.

Dear AUI,
I am not a new Amiga user (I was bought my Amiga 1000 back in 1986), but I am new to Amiga programming. I moved to school in Spain shortly after acquiring my Amiga and I am encountering some problems. The most important problem being that in the move abroad I lost my Amiga registration cards and consequently I have had great difficulty in obtaining V1.2 software of which Kickstart 1.2 is the only disk I now possess. With your magazine announcing the launching of V1.3 software soon, I ask your help in finding how I may get copies of Workbench 1.2 and both Kickstart 1.3 and Workbench 1.3 when they are released.
My other problem is that I decided it was high time to start programming the Amiga and so I took it upon myself to learn 68000 machine code. Having now learnt it and finding it easy to understand (5 years of experience with a 64 removing side borders etc. and generally messing around with the 6510 may have helped!); I now need to find an assembler that is reasonably priced, yet exploits all the features of the 68000 chip and the Amiga's extra features too. Also, bearing in mind that I am a machine code purist and will be programming in machine code unless it becomes inherently obvious that my needs require a combination of high level and machine code routines, I would like to have a little mess about with C, therefore is it worth buying a C compiler or will the one on the fish disk you mentioned in the August 88 issue suffice? — (Which fish disk is it on please?)
Finally, can you tell me if it is possible to permanently damage the Amiga by programming, in any way.

Yours faithfully,
Simon O'Connor, Spain

Dear Simon,
You can obtain the missing parts of your 1.2 operating system software from the UKAUG, check the address above. However, 1.3 is still not available in the U.K. It was scheduled for release at the recent PC Show but Commodore have delayed release in the U.K. until November at the Commodore Show. Sounds familiar doesn't it? 1.3 is already available in the U.S.A. and I have heard from reliable sources at Commodore that the Enhancer Packs are already in stock at a warehouse somewhere in England.
As for good assemblers I would recommend the Hisoft DevPac 2, which WAS released at the recent PC Show. Hisoft provide excellent support for their assembler, which is among the top selling assemblers for the Amiga. The C compiler I mentioned is on Fish Disk 110. My use of the word compiler was in fact a little loose. On Fish disk 110 there is a C preprocessor for the PD assembler A68k. This takes C source code and translates it to assembler source code, which can then be assembled using the aforementioned assembler and then linked using Blink and Small lib which are also included on the disk. As to whether it is worth trying, the obvious point is that it is free; so why not? The only permanent damage that could be inflicted while programming the Amiga is to the programmers mental health!

Dear AUI,
After six months of using my Amiga 500 with a colour TV and modulator, I have decided to upgrade to a better monitor. My main requirements are to read 80 column text easily (when programming and word processing) and to hopefully still be able to watch television. I can afford anything up to £250 and would be very grateful if you would answer the following questions before I part with my money. . . .
1. Exactly what is the difference between the Commodore 1081 and 1084 monitors?
2. Is it possible to receive TV pictures on a computer monitor? (I have heard a VCR can be connected up to enable this). I also have a couple of questions regarding the AmigaBASIC editor. Is it possible to change the difficult to see cursor into a square, rather than just a vertical line? Is there any way to put the cursor into an "overwrite mode" instead of inserting all the time? Thanks for your attention, keep up the good work!
Yours sincerely,
David Rollinson, Derby.

Dear David,
The difference between the 1081 and 1084 is negligible when used with an Amiga. In fact the 1084 has extra inputs to allow its use with the Commodore 64 and 128. Apart from this, the finish on the screen is slightly different. The 1084 has a matt type finish, which does help to dissipate some of the glare generated.
2. Both the 1081 and 1084 can be connected to a VCR via their composite video inputs. Just take the output from the video recorders composite video output to the monitor. The sound can also be connected providing that the video gives a separate audio output. A dedicated tuner designed to enable computer monitors to also function as Televisions was reviewed in last month's AUI.
As far as I am aware there is no way to change the AmigaBASIC editor in the way you mention. If anyone out there knows better, please let me know and I will pass the tip on. The only advice I would offer is that careful choice of colours can help.

Dear AUI,
I am an Amiga 500 owner and I have to questions for you to answer.
1. Can you recommend any Amiga machine code books for an absolute beginner?
2. I have written some AmigaBASIC games but I have to load Workbench, and Amiga BASIC first to use them. Can you tell me how to boot my games directly as with most commercial programs? Hope you take pity on me and answer my questions! Greetings from
L.D., NORWAY

Dear L.D.

1. There are two good books currently available about programming the Amiga in machine language. One is published by Compute! and the other by Abacus. However, both of these books assume a fair degree of knowledge about 68000 assembly language. As with all languages it is sometimes advisable to buy a none machine specific guide to the language before embarking upon the intricacies of your particular machine. The language in question here is 68000 assembly language and I would recommend a book by Leventhal called "68000 Assembly Language Programming" published by Osborne/McGraw-Hill as a good reference point.
2. There are two methods that you can use to do this. Firstly you could copy your program and Amiga BASIC onto a bootable disk and change the start up-sequence so that the last line was "AMIGABASIC ProgramName", where ProgramName is the name of your program. Otherwise you could use a compiler to make it look more professional, then the last line of your start up-sequence would be just "ProgramName."

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SOUND OASIS

The Multi-talented, Multi-lingual Amiga can now read yet another dialect. Paul Andreas Overaa samples its delights.

Sound Oasis is a new 'sound sample reader and editor' program by New Wave Software. It is designed primarily to allow access to the sound samples available on 'Mirage' data disks. Ensoniq's Mirage sampling keyboards are extremely popular and there is now a vast library of sampled sounds. These data disks are reasonably priced and are available to anyone. You do not have to have a sampling keyboard in order to purchase and use the library data but you do need to be able to read the sample data and this is where Sound Oasis will help.

The program is supplied on a single disk together with a small but adequate manual. The master disk does contain some sound sample data (in Sound Oasis format) but after a few initial experiments you will probably want to get some Mirage data disks.

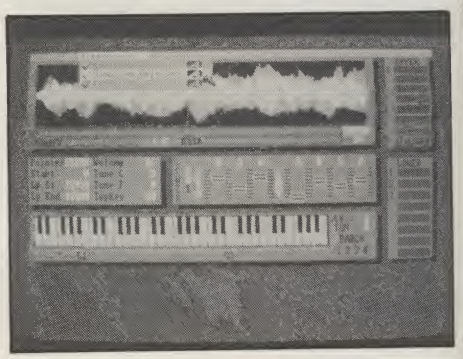
Loading data from a Mirage disk is a standard pull-down menu operation. It is easy to do . . . but it can take several minutes because of the conversion work the program has to do. Once the data is loaded it can be 'played' in several ways. You firstly have a choice between using the Amiga's keyboard or a mouse controlled mini-piano keyboard display. Secondly and more importantly . . . you can use any MIDI keyboard to trigger the sounds. This enables you, amongst other things, to use the Sound Oasis program as an expander module for an existing synthesiser.

The Mirage sampler supports keyboard splitting so different parts of the keyboard can have totally different sound samples. Sound Oasis recognises the Mirage arrangement and will have both upper and lower banks of sample data available. Editing a sample effectively takes a bit of practice . . . but it is well worth the effort.

"The sample's 'envelope' can also be modified and you can adjust the attack, decay, sustain and release characteristics of the sample"

There is a graphical display of the sample's waveform and by using 'slider control' gadgets you can change the LFO (low frequency oscillator) characteristics, i.e. you can vary the delay, speed and amount parameters. The sample's 'envelope' can also be modified and you can adjust the attack, decay, sustain and release characteristics of the sample. If you are familiar with the ins and outs of sampling you will be pleased to know that you can also control parameters such as start, loop start/end, volume and tuning.

A useful feature of Sound Oasis is that as well as saving data in its own format, it can also save sample data in IFF format (handling both instrument data and 'one shot format' raw sample IFF forms). It is a pity that there are no facilities for rewriting the modified Mirage data in Mirage format but I suppose you cannot have everything.



All in all Sound Oasis behaved quite well. It is an interesting program that has several potential use areas. It is robust, has the necessary MIDI facilities to enable possible use as an expander module and provides a useful Mirage/IFF conversion facility. It should be a useful program addition to that ever expanding breed of Amiga/MIDI orientated musicians.

P.A.O.

Acknowledgement: Thanks to Pete at the London Rock Shop for providing us with some Mirage sampler data disks for the review.

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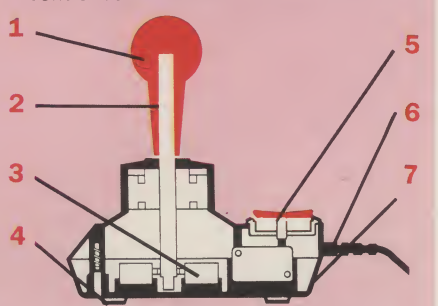

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Menace

With only a handful of horizontally scrolling shoot 'em ups written for the Amiga, the market may well be hungry for a quality example of the format. Menance, the first release from Pyygnosis' new label Psyclapse (where do they find these names?) has at last proven the coin-op level capabilities of the Amiga (not the ST for a change).

Draconia is an artificial planet inhabited by some of the meanest aliens in the universe. Their galactic terrorism must be halted, so what better way to stop them than to blow up their planet? (No half measures for Psygnosis!) A huge space slug takes you in his mouth "Trojan Horse" style up the planet, superbly drawn so as to fill almost the entire screen. As he opens his mouth you thrust outward (no doubt grilling his tonsils in the process).

Level one opens with couple of streams of bubbles floating towards you. Shoot all the bubbles and, as you would guess, an icon is left behind. Starting as a bonus of 1000 points, the more times you shoot it the more valuable it becomes. Cannons, lasers, speed and outriders are all available for beefing up your ship's performance. Protective shields and full shield recovery can also be collected added security.

Each level has its theme, the first has very strong sub-aquatic look. In the foreground of the two-plane scrolling background, tentacled creatures threaten to distract you from the business of fighting the aliens.

Regardless of the skill level, the aliens are always harmful. Some float casually across the screen, others collaborate to form a winding snake of pulsating cells.

Nearing the end of the level, the screen clears to make for the good old end of level guardians. Although static, they still come well up to scratch; the prehistoric skeleton, complete with throbbing heart, is one of the best. If, after a short while, you have still not killed the mega-alien, its barrage of fireballs is replaced by much faster homing mines that are as good as impossible to dodge. Later levels bring even

more entertainingly gruesome graphics including skulls entwined in the limbs of strange scavenging lifeforms.

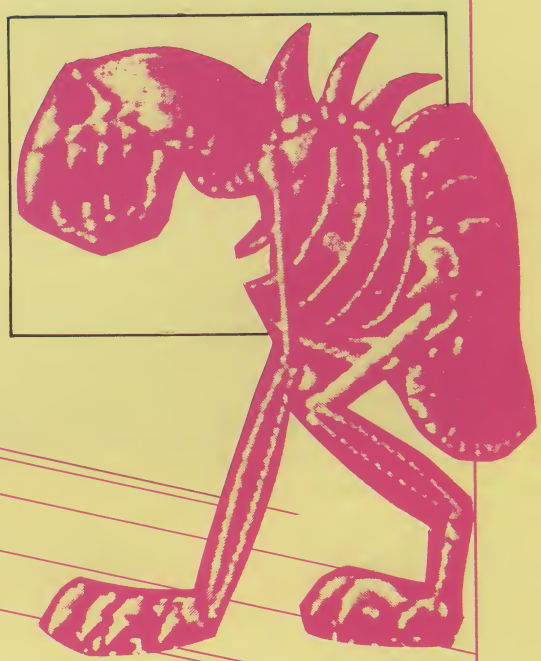
"More skulls rise from their sleep, spinning around you and spewing death globes."

Enhancing the coin-op feel is a continue play option after each game, which allows the next game to start at the beginning of the last level you were on. This, together with the easier skill level makes Menace very playable to begin with, although it may lead to premature completion and so limited lasting interest. You could play on the harder level without the continuous play, but the opportunity to get to the end by the easier route.

Although there is no musician credited in the game, the soundtrack and effects are almost identical to those of Quadralien composed by David Whittaker. These would be very commendable (or a reprehensible rip off, depending on your viewpoint) but for their total lack of originality.

As you can see, the graphics are up to the very high standards set by Psynosis' previous games. What you cannot see is the smoothness with which the backgrounds scroll and fluid animation of the sprites. Menace is at present unrivalled in its field and leaves me no option but to order addicts of Salamander, R-Type, Darius and co. to go out and grab a copy as soon as possible. Highly recommended.

T.H.



ace

Psyclapse

Graphics:	9
Sound:	7
Playability:	8
Value:	8
Price:	£19.95

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S	T	O	R	R	E	W	O	L	T	O	A	D	
N	E	O	G	N	I	D	R	S	C	S	R	E	
O	G	U	R	A	N	T	I	M	T	T	T	E	
I	E	A	I	A	Y	O	U	X	C	D	I	T	
T	S	T	O	R	G	A	E	P	O	A	C	N	
A	O	F	L	I	F	E	T	I	M	E	L	A	
L	F	I	P	P	Y	C	O	M	M	H	E	R	
U	T	L	O	P	R	E	C	I	O	E	S	A	
M	W	O	O	X	D	I	E	A	D	A	S	U	
R	C	O	M	P	U	M	E	T	O	I	U	G	
O	L	C	O	M	P	U	M	A	R	T	S	E	
F	O	M	U	L	X	Y	S	D	E	I	S	K	

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Tie-Break (complete in twenty words or less)

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On the competition entry form you will find a grid containing 15 words relating to Commodore brand floppy diskettes.

Simply find the words on the grid (they may be horizontal, vertical, diagonal, backwards or forwards) and complete the tie-break in your own words.

Return the Entry Form with your personal details to Amiga User International to reach the judges no later than January 16th, 1988.

All correct entries will be entered in the prize draw for the prizes and, in the event of there being more than one correct answer, the judges will make their final decisions based upon your answer to the tie-break.

RULES

1. All entries must be received by 16th January, 1988 and only official entry forms or photocopies will be accepted. Proof of posting does not constitute proof of receipt.
2. Employees associates and printers of Amiga User International. The Publicity Team and Compumart are not eligible to enter this competition.
3. All prizes are as stated — there are no crash or other alternatives.
4. All correct entries will be entered into a final draw, which will be made by the judges panel comprising representatives from Amiga User International. Compumart and The Publicity Team.
5. The judges decision will be final and no correspondence will be entered into.
6. The prizes will be awarded and will become the personal property of the winning entrants.
7. All price winners will be notified by telephone and/or post and full list will be published in the March issue of Amiga User International.

BECOMING AN AMIGA ARTIST

by Scott-Foresman

Despite its title, this is no simple 'learn to draw' book but a catch-all guide to Amiga art products, with the added bonus of tutorials on sound and animation techniques.

The large paperback book by a trio of experts spends a lot of time running through the facilities of the most popular graphic programs – a bit redundant because anyone who owns the likes of Deluxe Paint, Impact or Aegis Animator should surely be familiar with how to use them. However, there are some handy tips salted away in the text – for instance a dodge to get the non-IFF clip-art files from Deluxe Print into Deluxe Paint is useful (load it initially into a label format while in DPrint, export it to disk, then reload into DPaint as a brush before re-mapping). More than half the book is taken up in this way, with comparisons of graphic products and thumbnail exercises taking the reader through the rudimentary aspects of their operation. There are also features on hardware products, from Genlock to MIDI interfaces, but you cannot help feeling there are so many items to be covered that often the book skimps in trying to fit them all in.

Unfortunately the speed of development in the computer industry being what it is, there are already a number of top-quality pieces of software not even mentioned – Fantavision, PhotonPaint and Deluxe Productions for example. Where the book does score is in its coverage of programming graphics in Amiga BASIC. This is thorough and a rewarding exercise considering the vagueness of the original BASIC manual. Using easily understood examples and a gentle tone, it guides the reader through creation of screens, windows, primitives and shapes before tackling the heights of sprites and Bobs. You can forgive the generalisations of the earlier software cribs for this splendid section alone.

The book contains eight full-colour pages of artwork – mostly undistinguished – and plenty of informative line drawings to illustrate various points in the text.

Verdict – apart from the excellent programming tips this is a generalised catalogue and comparison of existing products, which is already out of date. If your interests lie in this field, I would advise you to check out this book alongside *Inside Amiga Graphics* which we reviewed earlier this year and which concentrates more on the programming aspects.

P.L.

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DIAL M FOR MODEM

Faced with the bewildering array currently available, choosing a modem can be a daunting experience, Stuart Williams steers you through the confusion with his layman's guide to modems.

What is a modem? Well, it is a device which translates the electrical output from the Amiga's RS232 port into audio pulses which are MODulated onto a carrier tone so that they can be sent along the audio telephone network. The modem DEModulates the pulses on the received signal and converts them into RS232 compatible impulses. Your terminal software reads the RS232 to enable received data to be displayed on your monitor and connects your keyboard to the port to enable you to send data out via the modem. Essentially, then, a modem is a data carrier MODulator/DEModulator, hence the name MODEM.

The modem has several features which define its usefulness and effectiveness for a particular purpose and its cost. These features should be scrutinised to enable you to make your choice of modem. They are (a) whether it is direct connect or acoustically coupled, (b) what baud rate (transmission/reception speed) it is capable of operating at and (c) whether it is 'intelligent' or dumb'. These three factors will determine what services you are able to use the modem with, how easy it is to use, what software it will be compatible with and how much it will cost.

Looking firstly at the connection the modem makes to your telephone line, you will find that if you have the old type of hard wired connection and do not want a jack socket installed, you will have to settle for an 'acoustically coupled' modem. This is a device with two rubber cups which fit over the old-style telephone handset to make the connection. Whether you can use one of these depends on whether you have a 'phone with a suitably shaped handset. Some of the more modern phones may cause problems.

The acoustic coupler has several disadvantages: restriction to low speeds (300 baud or occasionally 1200/75 or 1200/1200 baud), unreliability in noisy environments due to audio leakage and it is incapable of autodialling. On the other hand, it can be battery powered and may be useful for portable applications or in locations where there is no compatible jack socket. It is also cheap.

If you have a standard BT jack plug installed, you can fit a direct connect modem. This, unsurprisingly, connects directly to the line like your telephone. Better examples include a through socket to connect the telephone inline with your modem, either to enable manual dial modem use, or to facilitate normal voice communciations with the 'phone.

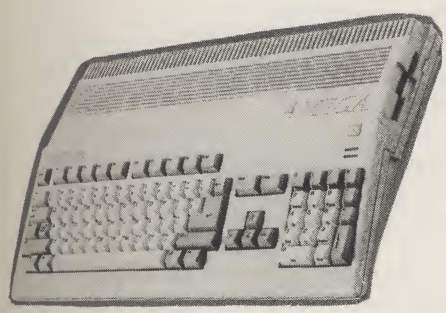
"The direct connect modem is the most commonly used device and has the advantage of far greater reliability due to the lack of external noise interference."

It is also more sophisticated in operation, since it can work at much higher speeds (up to 2400 baud or higher) and is therefore capable of connecting with many more services and passing data more efficiently and cost-effectively and is capable of operation by command or under software control.

The second major factor in choosing a modem is the baud rate or operating speed of which it is capable. Modems are available from low speed (commonly 300 baud, or bits per second) up to ultra-high-speed (19,200 baud and above, on leased lines or networks). In practice, speed is limited by the quality of the line and the depth of your pocket! If you take a look at the separate list with this article, you will see how price is roughly dictated by speed – I have limited the list to a selection of popular reasonably priced modems available in the UK at the time of writing, with a top price limit of £400. There are many more modems available but to include a complete list would take two or more pages for the list alone! Just because a modem is omitted from this list does not necessarily mean that it isn't a good product – merely that there is not room for it in the space available.

How do you choose the speed you require? Simply match it to the speed of the service you wish to use. Prestel users, for instance, commonly use cheap modems running at a split speed of 1200 baud receive, 75 baud transmit. Many non-commercial bulletin boards and Electronic Mail services also use this speed, so such a modem is a cheap option, if your software is capable of split speeds (many programs of US origin do not include 1200/75 baud). It is possible to get away with a cheap 300 baud only modem for occasional use on many systems but the slow rate can prove expensive if you are a regular user. Most modem users will normally opt for either a multi-standard modem capable of both 1200/75 and 300 baud, or a full specification unit also usable at 1200 and 2400 baud. The price of these has dropped sharply recently and 300 and 1200/75 baud units are available in the U.K. between £100-£175 (i.e. Miracom WS2000, WS4000 and Pace Linnet) dependent on features and 300 to 2400 baud units from £199.95, i.e. Supra 2400, Phonecom and, at higher prices (£300 plus), the professional Pace Series 4 or Miracom WS3000 series. Modems omitting only the 2400 baud rate fall between these ranges and modems of higher speed still (4800 baud and above) rocket skywards. Fortunately, you are unlikely to need anything faster than 2400 baud and in any case that is the practical limit on BT's ageing network!

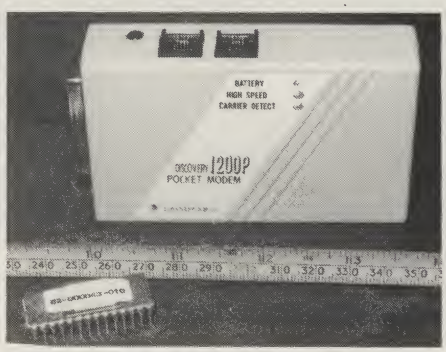
The final major factor in modem choice is whether you wish to purchase a 'dumb' (i.e. manually controlled) modern, or an 'intelligent' (or software controlled) unit. You can get away with using a manual modern (such as the Miracom WS2000) for most purposes, as long as your software allows it. Normally, there will be no problem but if in doubt contact the software supplier before purchase. In practice, it is uncommon to find manual moderns with speeds higher than 1200/75 baud, so this may influence your choice. For most users with the necessary funds, the intelligent modern will be the one to go for, not only for control convenience (the modem will dial the call for you, under software command) but for the many other features offered. For instance,



an intelligent modem will normally incorporate speed buffering to enable the Amiga to talk to the modem at one speed and retransmit data at another, e.g. translating from 1200 baud at the Amiga port to a 1200/75 baud service at the other end of the telephone line. Since most software (except Prestel terminals!) omits this speed, this is very handy indeed. In addition, more expensive units may include line noise filters or special error correction such as MNP (the latter is normally a very expensive option on top class modems). Also, most intelligent modems include auto-answer as well as autodial, so that you can set up your own remote system. Beware, however, suppliers of intelligent modems which are not compatible with the ubiquitous American 'Hayes' standard command set; software which will control non-Hayes intelligent modems is as rare as hen's teeth, although one or two packages may be sufficiently customisable to get them working with one of the most obscure devices available in the U.K. On the whole, though, buy only intelligent modems which are quoted as being 'Hayes-compatible'. Most terminal programs are capable of controlling these devices with varying degrees of sophistication.

This, then, is what you need to consider when you decide to purchase a modem. There is, however, one final factor to consider before you make a purchase; whether the modem is 'approved' or 'unapproved'. In the UK all modems have to be passed by the BABT approvals board. It is illegal to connect an unapproved modem to BT's telephone network, since it has not been checked over by BABT for safety. In practice, it is unlikely that a high-quality modem will prove dangerous but you should consider the law first. Incidentally, it is not illegal to buy or sell such modems, only to use them! You will find that unapproved modems are normally considerably cheaper than approved devices, partly due to the fact that the approvals process is long-winded and expensive. Unapproved modems are also normally imported from the USA and the Far East, where quality modems have always been considerably cheaper than British made products. You will find a sticker on the modem indicating its approval status; this is required by law. Weighing up these factors, plus the depth of your pocket, should enable you to make your decision on the modem for your Amiga. All you have to do then is beat a path to your dealer's door and get online!

S.W.



MODEM DATA PANEL – A SELECTION OF POPULAR MODEMS UP TO £400

Model	*Specification*	*Supplier*	*Price*
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Linnet 1200	1200, 1200/75, 300, Hayes, AA, AD, BT	Pace	£274.85
Series 4 2123S	1200/75, 300, Hayes, AA, AD, X, BT	Pace	£316.25
WS2000	1200/75, 300, 'dumb', BT	Miracom	£125.00
WS4000	1200/75, 300, Hayes, AA, AD, BT	Miracom	£175.00
WS3000	1200/75, 300, Hayes, AA, AD, X, BT	Miracom	£295.00
Supra 2400	2400, 1200, 300, Hayes, AA, AD	Frontier Software	£199.95
Datatronics 1200P	'Pocket' 1200, 300, Hayes, AA, AD, B	Digital Matrix	£143.75
Datatronics 1200C+	1200, 300, Hayes, AA, AD	Digital Matrix	£155.25
Datatronics 1200A	1200, 1200/75, 300, Hayes, AA, AD	Digital Matrix	£182.85
Phonecom 8685	2400, 1200, 1200/75, 300, Hayes, AA, AD	Digital Matrix	£224.25

KEY:

Hayes	**– Hayes compatible**
AA	**– Auto-answer**
AD	**– Auto-dial**
X	**– expandable**
B	**– battery powered**
dumb	**– manual**
BT	**– Approved by BABT**

Prices shown include VAT and are a guide only.

Pace and Miracom (previously Miracle Technology) modems should be available from most good computer shops. Digital Matrix (Tel: 021-704 1399) and Frontier Software (Tel: 0423-67140) deal by Mail Order.

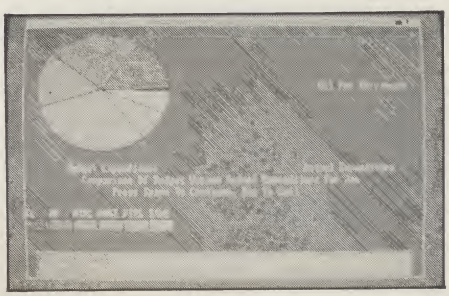
Home Accounts

In these days of Electronic Fund transfers and credit cards, keeping track of your home accounts maybe far from simple. Andy Eskelson examines a packaged designed to lessen the burden.

MODERN living is a complex business and even Mr/Mrs average is likely to have various sources of cash and many and varied debts which need keeping under control. Salary, credit cards, charge cards, mortgage and bank loans A this list the day-to-day running expenses of a car and home and you can see that things can start to get confusing. Keeping track of your personal finances is a thing that a computer can very easily do — especially when equipped with the right software.

Home Accounts is produced by Digita International who have developed a reputation for producing no-nonsense products at very good prices. You might even say cheap prices but that would do the product itself an injustice as it is far from a 'cheap' program.

The manual is A5 in size and 35 pages long. There are a few screen shots but instead of a photograph they are printouts and do not quite match the Amiga version. However, the differences are slight. The first section of the manual is a 'get you going' tutorial that in 34 simple steps takes you through the process of setting up the program. This process takes about an hour if you are a one fingered typist, so it is not too arduous a task. As with most programs it is a very good idea to run through the tutorial as you will find that there are a few shortcuts you can use that will make life a lot easier when you come to use the program in anger. The rest of the manual is a reference to each of the main menu functions and the variations thereof. It is rounded off with an index, a nice thought often lacking on such a short booklet.



The program is a standard Workbench project and is activated in the normal way with a double click. There is a **readme** file. However, you have to read it from the CLI. I wonder why there was no default tooltype of Notepad, which would have enabled the user to simply click on the **readme** file to find out what was in it.

The program boots up in a few seconds and the user is presented with a very simple screen, using just the four Workbench default colours so it is rather bland. It is very clear and I would rather have a clear display than a technicolor nightmare. A standard set of pull down menus appear with a click on the right mouse button and you use them in just the same way as the workbench menu system. **Project, Account, Edit and Report** are the main headings. They are fairly self-explanatory, dealing with storage, account information, data entry/type settings and report outputs.

"Home accounts can handle transactions between ten accounts and have up to 360 transactions in each account."

Home accounts can handle transactions between ten accounts and have up to 360 transactions in each account. You can set up a budget for each account . . . This means that you can allocate chunks of money to various types of expenditure. Each type of expenditure can be given a name but the program will only accept up to four characters so you have to exercise some care when you allocate names. ie **PTRL** is petrol. There is one reserved word and that is **TRAN** this stands for transfer and it is used when you want to move cash from one account to another. You are limited to 60 types of expenditure, which should be enough for most people.

continued on page 96

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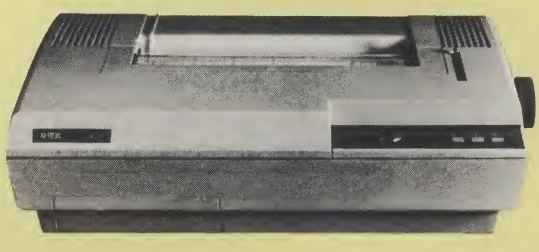
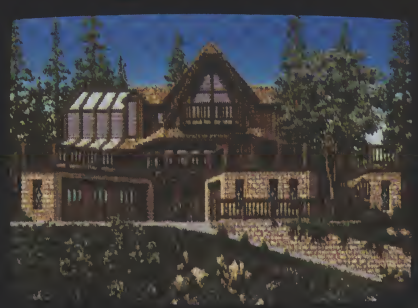


Xerox 4020
Colour Ink Jet Printer

what you see



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PHOTON PAINT SURFACE DISKS I & II

Are Microillusions suffering from a touch of marble madness? Peter Lee gives them a check up.

Microillusions have just released probably the weirdest set of clip-art disks you could imagine. The two artists' library disks contain digitised pictures of polished rocks and wood and are meant for incorporation in the company's outstanding HAM drawing program Photon Paint.

These two surfaces Disks contain large brush images which can be loaded into the paint program and manipulated with its unique 3D brush and luminence commands. For instance, if you want to create an onyx pillar you can bend the relevant brush surface around a tube and then for good measure specify the direction of illumination to give a superb solid feel. Some of the brushes fill an entire screen and these make excellent backgrounds; but in the main each brush, when loaded, contains four large surfaces from which to cut the particular texture you need.

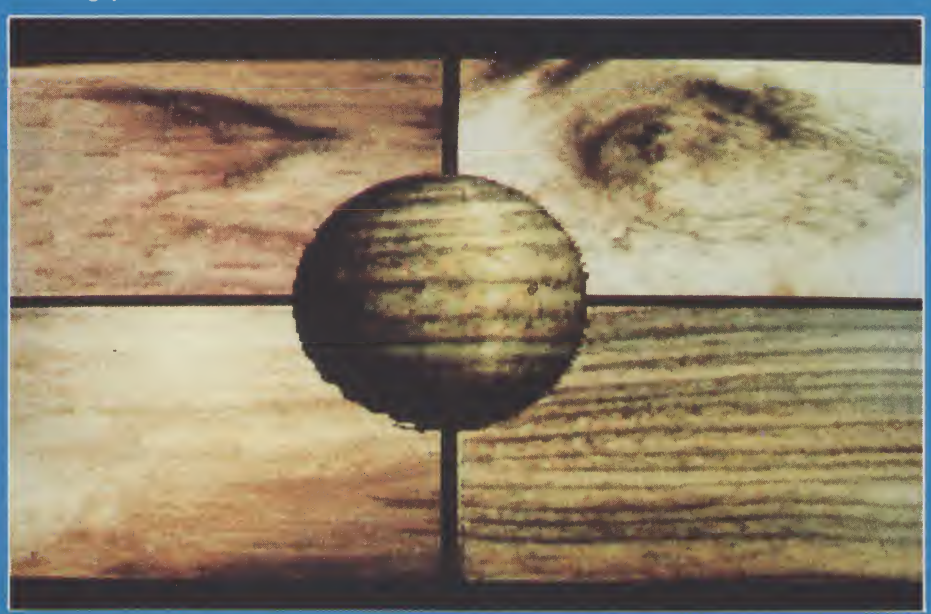
The marbles are pretty similar, though wonderfull realistic but the woods are something special and a texture very hard to get right by drawing yourself.

Despite this sameness among many of the samples, the applications are quite wide-reaching. If you need a wood-panelled room, simply select your timber and bend it into shape with perspective. If you need a stone ball then wrap the brush around a 3D sphere. Marble floor tiles are easy to lay!

On their own surfaces are, in all honesty, pretty mundane. It is only when you begin to bend, shape and highlight them from within Photon Paint that they have artistic merit.

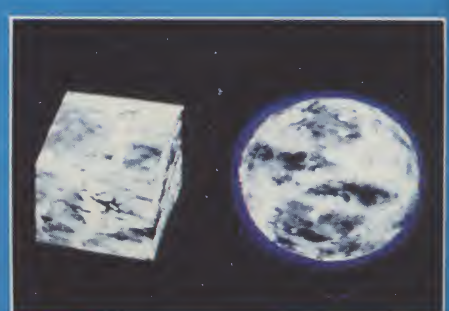
Microillusions will probably not thank me for saying this but even if you do not have Photon Paint, you can still make use of this specialist artwork in a standard mode drawing program (Deluxe Paint etc) providing you first convert the brushes into the resolution you require; you will need Butcher II or Pixmate for this and although the image is degraded with fewer colours, some intersting and useful effects are possible.

The full list of surfaces is as follows:



DISK I

Slate, ceramic, woven reed, cedar, cane, oak, pecan, sun beech, hickory, amber, camphor, burl, cherry, wormy chestnut, Spanish oak, teak, cortena pecan, walnut, mahogany, maple, lioz marble, light and dark travertine and light onyx.



DISK II

Brown slate, gray slate, red marble, green marble, gray marble (several variations), stone, beige marble, green onyx and brown onyx.

P.L.

Price: £19.99 (each)
Contact: Activision, 23 Pond Street, Hampstead, London NW3 2PN. 01-431-1101.

T'R I A'D

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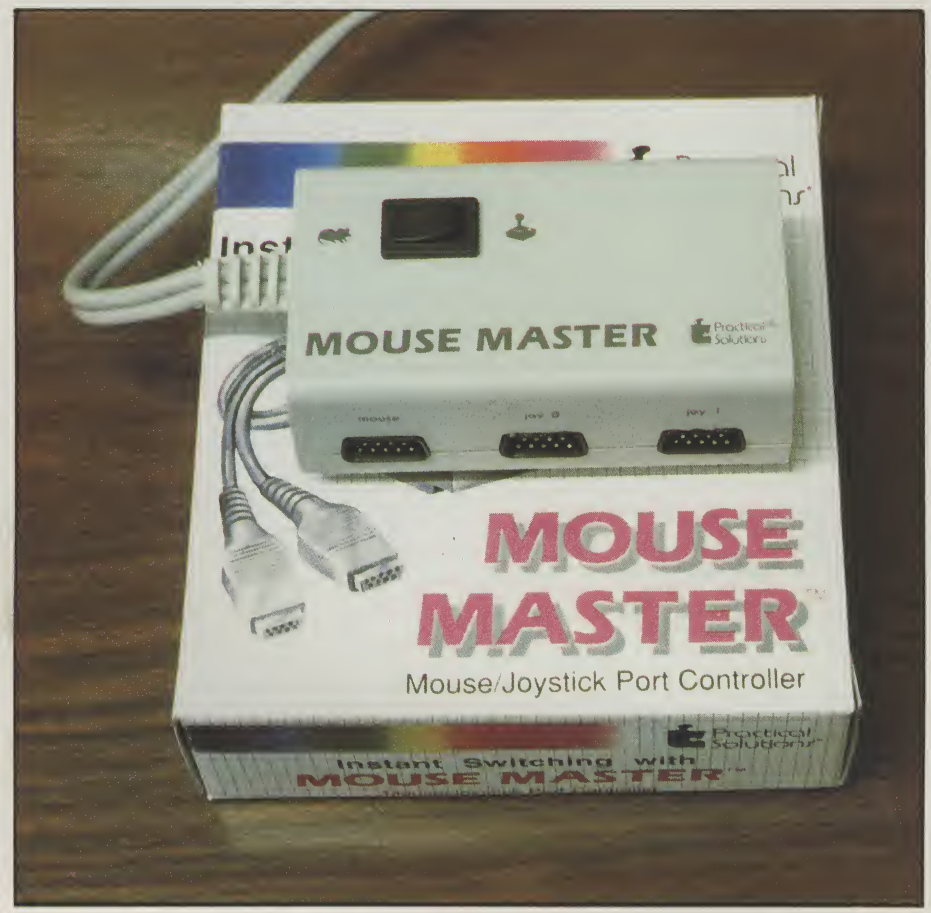
MOUSE MASTER

Have you mastered your mouse yet? Bill Hardwick has — he explains...



As the number of Amiga users continues to grow, so too does the amount and availability of new and interesting accessories. One such accessory for your Amiga is the Mouse Master from Practical Solutions.

Mouse Master is a small, well-constructed, Amiga-coloured, plastic box. It has two eighteen inch leads coming out of one end. Three nine pin D-Type sockets labelled 'mouse', 'joy 0' and 'joy 1' are set into one side and there is a small rocker switch located on the top face. There are also two small illustrations on the top, one either side of the rocker switch, depicting a mouse and a joystick.

The leads are designed to be plugged into the mouse and joystick ports on the Amiga. To ensure that the correct lead is plugged into the correct socket, one lead has a beige plus whilst the other is black. A mouse and one or two joysticks are then plugged into the Mouse Master. Once connected the Mouse Master can be placed in any convenient position on either the left or right of the keyboard. This is a great advantage to A500 users as it means they will no longer have to reach around to the rear of the machine to access the mouse ports. The rocker switch is used to connect either the mouse or whatever is plugged into joy 0 to the Amiga's mouse/joystick port 1. So for games etc. that insist on using port 1 for the joystick, all that is now required is a simple flick of a switch.

It may also be possible to use the Mouse Master to enable Amiga 1000 hardware accessories that use the joystick ports to use the recessed ports of the A500 and A2000. An example of such a device is the SoundScape Sound sampler. Likewise A1000 owners with the external type memory expansion, which usually come very close to the joystick port should appreciate being able to have both ports readily available. I suggest, however, checking with the supplier to ensure tha all the necessary pins are connected for your particular requirements.

An internal inspection of the Mouse Master dispelled my initial worry that the switching may have been accomplished using some kind of mechanical device. Instead, it contained a small circuit board that enabled the plugs to be switched electronically. This should ensure a long and reliable life for the Mouse Master.

The use of a mouse and joystick controller such as this tends to be overlooked, until a connector in one of the ports breaks off bends during use and then repairs can become costly. Using a Mouse Master will not only save you the sometimes awkward task of plugging and unplugging your joystick or mouse but could even save you money!

B.H.

Price: £24.95
Contact: Bath Computer Shack, 8e Chelsea Road, Lower Weston, Bath, Avon BA1 3DU. Tel: 0225-310300.

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Be prepared to spend hours admiring the stunning graphics of this game. Be entranced by the crisp detail of the ships control panel. Gaze upon the sleek silouhette of the verdant valleys of Planet MONDO. Enjoy the spectacular beauty of outer space.

There is no age limit for buying Sex Vixens From Space, however people who suffer from high blood pressure should refrain from buying this exciting game.

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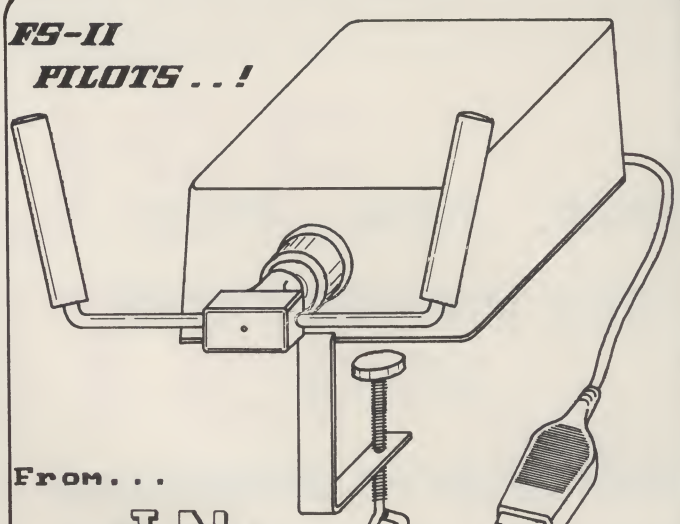

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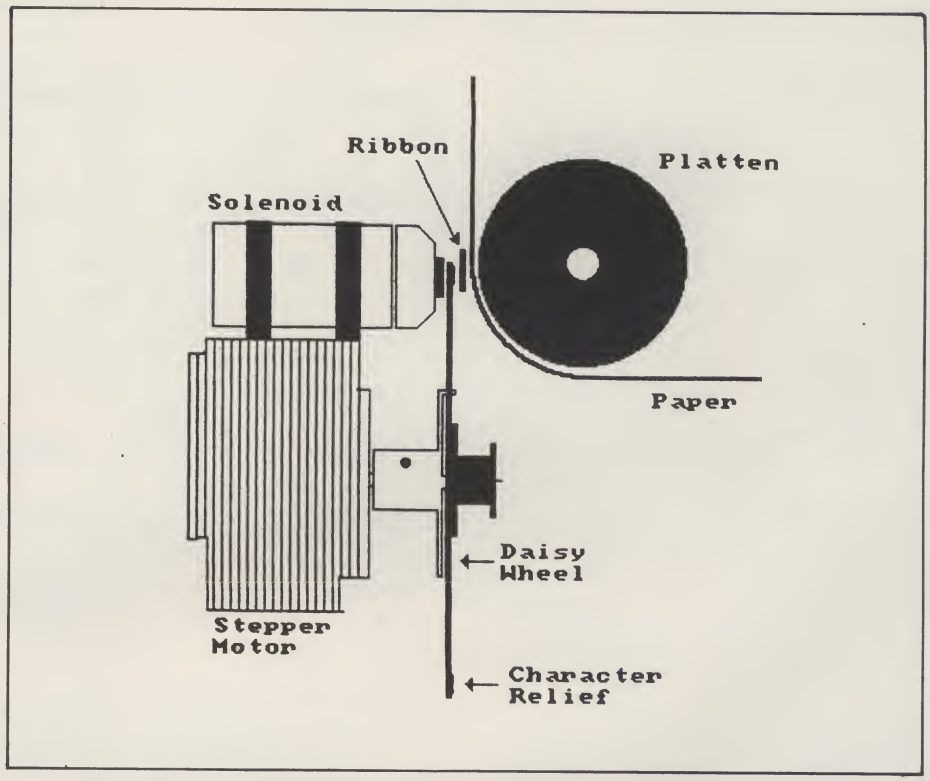
PRINTERS

One of the most important peripherals after a disk drive is a printer. For most businesses a printer would be considered essential. Choosing the right one for your application can be a problematic experience. Andy Eskelson explains...

Printers broadly fall into four types, although there is often some degree of overlap. They are: Letter printers, draft printers, graphic printers and drafting printers.

When printing letters, a high quality of print is normally required. Until very recently the ONLY way to achieve this was to use real printing systems, impressing into the paper the shape of the letter with a metal relief of the letter, coated with ink. A few improvements have been made but the system is still very much the same.

Plastic has replaced metal for most systems and the ink is carried on a long strip of fabric or nylon which is placed in such a position that the letter hits the 'ribbon' before it hits the paper. In the process a small amount of ink is transferred to the paper.



Daisywheel

There are three main types of printers that use this method and they are Daisywheel, Golfball and Thimble. By far the most common and mechanically the simplest, is the Daisywheel. The name comes from the shape of the printwheel; it is approx 8cm in diameter and has somewhere between 96 and 102 prongs (petals). At the end of each petal there is the relief of a character. The daisywheel is connected to a small motor that can position the wheel very quickly. To print a letter an electronic ram (solenoid) pushes the petal end onto the ribbon and paper. Needless to say the petal has to be made in such a way that it can withstand this flexing thousands of times.

Daisywheel printers come in all shapes and sizes and choosing one can be very confusing. The most variable elements is the price. It can range from anywhere between £200 to £3000, probably more! However, in general a £200 printer will give as good a result as a £3,000 unit but that, of coure, is only half the story. It is the printer's special functions that affect the price most. Speed is probably the most important difference. The cheaper models will typically only print at up to 20cps (characters per second) whilst the more expensive are capable of achieving speeds in excess of 120cps. If you are producing a lot of letters then the speed difference may be a very important factor in making a decision. Another important consideration is the mechanical contructions; top range printers are designed for heavy use, say in an office but the cheaper printers are built to a price and will not stand that amount of use, though for the occasional letter or report they are fine. The more esoteric types of features can play a large part in the choice and price of a printer. If proportional spacing is required then the printer must be able to microspace (that is move the print position in very small steps, normally about 1/255 of an inch) and the software must know the sizes of the particular printwheel in use. If all is well the software will be able to instruct the printer to produce proportional spaced text and still be able to right and left justify.

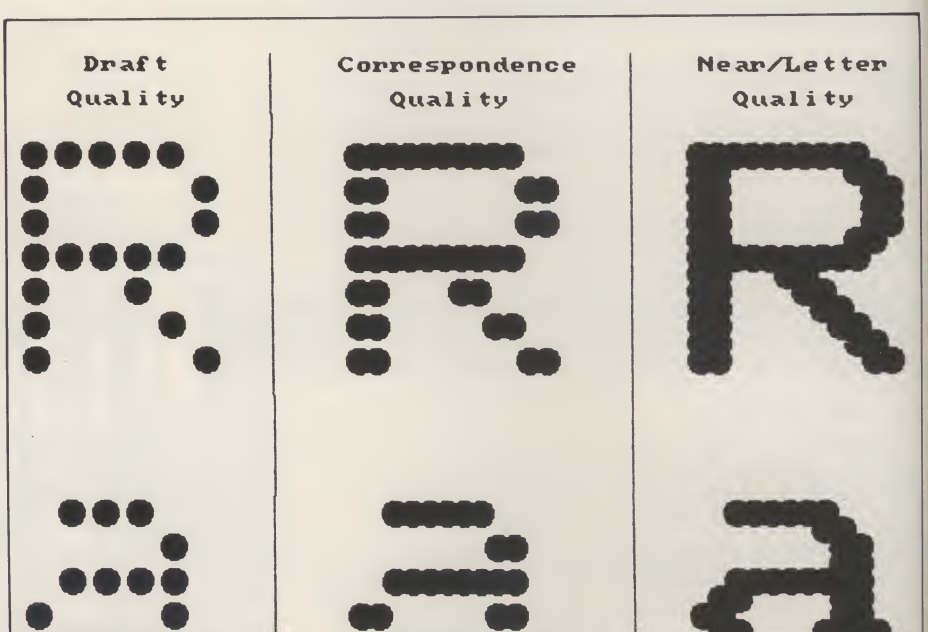
The Golfball and Thimble printers are no longer very popular although a few variants are still available. The Golfball is quite common in the world of typewriters and there is the provision of a socket on some typewriters that will allow them to act as a computer printer. Golfballs and thimble printers are very similar in operation. The characters are embossed onto a ball shaped carrier in the case of the golfball and onto a thimble shaped carrier in the case of the thimble printer, no surprises there. To select a particular character the ball or thimble can rotate and move up and down. This has the effect of reducing the time required to select a character. Quite often the ball or thimble will move less than half a turn. The primary drawback with golfballs and thimbles is the mechanical complexity and the cost that brings with it.

Matrix

The most common type of printer that you will find on sale is the impact dot matrix. As the name suggests, the characters are formed by a series of dots arranged in a square matrix format. The principle is exactly the same as that used to form the characters on the VDU screen of most computers. In the early days these printers were very crude, having at most 8 pins arranged vertically, so any characters printed were, at best, a series of dots – you might wonder why people bothered with dot matrix. Well the main reason was cost. Dot matrix printers were hundreds of pounds cheaper than typewriter type printers at the time. This is not so true now that daisywheels are manufactured in quantity. The other reason was the speed, even the slowest dot matrix could work at 40cps and 100cps was available for a small increase in price.

It is not too surprising, therefore, that the dot matrix has had a LOT of development work done on it over the last ten years or so. A dot matrix printer consists of a moving printhead that has a series of pins arranged in a vertical row which are fired at the paper by means of tiny electromagnetic solenoids. The ribbon is positioned between the pins and paper and when struck transfers an image to the paper. By stepping the printhead along in nice small steps any character can be built up row by row.

The major drawback with dot matrix prInters was that the dots that each character was made up from were very obvious. Several ways around this problem have since been developed. As this type of printer is reasonably fast it was feasible to make two passes over each line and by moving the paper slightly, it was possible to fill in the gaps between the dots. It halves the print speed but the quality does increase. Another improvement was to increase the number of pins in the print head. Surprisingly this has taken a long time to happen. Very early on the 8 pin head was replaced with a 9 pin head but until two years ago there it stopped. We now have the appearance of the 24 pin printer which, when combined with some clever software and multi pass printing, can build up letters that are of a VERY high quality. As there are many more pins in the head, they are currently more expensie to make but, more importantly, the pins are more fragile, so you have to take a little more care with them. You also have to ensure that you only use the special extra fine ribbons designed for 24 pin machines as the pins are so fine they could snag in a standard ribbon and this in turn could cause them to snap! These enhancements over the last few years have meant that the (almost obligatory) Near Letter Quality (NLQ) mode found on most modern printers can now live up to and possibly exceed, its name.



There are dozens of dot matrix printers on the market, one to suit everyone's needs and there are a lot of bargains to be found providing you look about.

Inkjets

At about the same time as some engineers were working on new ways of improving conventional impact dot matrix printers, others had come up with a new printing system ... the ink jet. Using this system characters were still made up of a matrix but there were no ribbons or pins. There was not even any physical contact between the print head and the paper. This was acheived by firing tiny droplets of specially formulated ink, designed not to spread or smudge, at the paper. Each droplet of ink was very fine and it is now quite common to have up to 48 jets in the print head, twice the number of elements a high quality impact dot matrix printer would have.

There are two methods used to fire the ink at the paper: Inkjet and Bubblejet. Inkjet printers use a small pizo-electric transducer, behind each jet, which when activated by a small electrical voltage, moves slightly. This causes a piston like action which squirts out a tiny droplet of ink at the paper.

The bubble jet uses heat. Instead of a pizo-electric crystal, each jet has a tiny heating element built into it. when switched on it causes a tiny droplet of ink to vaporise and the resultant pressure that this causes forces out a fine spray of ink onto the paper. Steam printing, you might say.

Injets and bubblejets have several advantages over impact printers: they are fast, can produce high quality output and are very quite, making them ideal for crowded offices and the like. You do, however, sometimes need to be careful in the selection of the paper that you use. Some inkjets and bubblejets work fine on standard paper while others require a specially coated paper to achieve maximum quality.

Lasers

One of the up-and-coming facets of computing is that of desktop publishing. Its primary attribute is the ability to freely mix text and graphic information on the same page and then print it out. For the text and graphics to be of a quality high enough for a professional application, the output must be of a very high resolution. For this purpose another type of printer has evolved.

For many years a printing machine had

continued on page 69

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EPSON EX-800

With the advent of 24 pin dot matrix printers and high quality ink jet machines, the humble 9 pin printer was beginning to lose face. John Walker, however, has discovered one such 9 pin machine with lots of prospects.

Times are a 'changing in computer printing. Cheap – or, at least, cheaper – laser printers are appearing. Ink-jet printers are beginning to offer near laser quality. Dot-matrix machines are getting more pins and challenging the output of daisywheel printers, which are now half the price they were a couple of years ago.

And where does all this upheaval leave the good old faithful 9–pin dot matrix machines? They, too, are changing. They are becoming more affordable than ever and much more versatile, improving in quality and ease of use.

A case of point is Epson's EX–800 which combines some of the features of 24–pin machines with, as an optional extra, colour printing as found on the old JX–80. As someone who dreaded the tedious tustle every time I tried to load fan-fold paper into Epson's FX–80, I cheered the ease with which you can use both continuous and single-sheet paper on the new machine.

"Most of the controls you need are to be found on the printer's SelecType Panel on its front."

Improved design also stretches to the dip-switches, which are now located at the back of the machine and can be reached without having to remove a cover. You will need to prod around with a small screwdriver to actually alter them but the good news is that you will rarely have to make adjustments.

Your main one will be to set up the printer to provide the right character set. You can choose between USA, France, Germany, UK, Denmark, Sweden, Italy and Spain, with five more – Japan, Norway, Latin America and further ones for Denmark and Spain – selectable by commands from software.

Most of the controls you need are to be found on the printer's SelecType Panel on its front. This has three press-buttons – for on-line, form feed and line feed – and a series of panels that light up when pressed.

The panels cover the main settings of the various type styles. You can choose between the fast Draft style and two NLQ (Near Letter Quality) fonts: Roman or Sans Serif. These can be printed in Pica (10 characters to the inch), Elite (12 characters to the inch) or Proportional styles and in Normal or Condensed characters. Further styles, such as superscript, subscript, double-strike and double width, can be chosen through software commands.

The EX–800 can emulate an IBM printer, although in that mode you will not be able to use all its features. You can also print the character graphics of an IBM printer while in its normal Epson mode. It comes with both serial and parallel interfaces. The manual is also an improvement on the past, being clear and easy to understand and containing a useful quick reference card to the printer's features.

Its ribbon is contained in a neat,

small cartridge which snaps into place easily – no more inky fingers when you replace it. It is not possible to re-ink the ribbon, though. For colour printing you slot in a four colour ribbon – black, blue, red and yellow. The life expectancy of black ribbon is said to be 3 million characters (at 14 dots a character). A colour ribbon will last for one million characters for its red, blue and yellow segments and two million for its black.

Paper handling will not have you jumping up and down with frustration, surrounded by crumpled sheets, which is too often the result with older printers. It can handle single sheets between 7.15 and 8.5 inches wide and continuous paper from 4 to 10 inches wide. (The bigger but otherwise similar EX–100 can take single sheets up to 14.3 inches and continuous paper up to 16 inches wide.)

Single sheets can be loaded simply by pulling a lever forward, slotting the paper into position and pushing the lever back. With fan-fold paper, you fix it on two moveable sprockets and then turn the paper feed knob until it is guided into positiion. Both operations are easy and caused no mishaps.

Epson claims very high printing speeds of 250 characters a second in draft pica mode, 300 characters a second in elite and 50 characters a second in NLQ pica. I am never sure how manufacturers measure these times. They seem to bear no relationship to my everyday experience.

I tested the EX–800 in a real-life situation, by using it to print an A4 page containing 250 words in 28 double-spaced lines of type, set at a width of 60 characters to a full line. Its draft pica mode was exceptionally quick, taking 19 seconds to print the page. This is as fast as any dot-matrix printer I have used,including 24-pin machines. It works out at 83 characters a second, which is short of its claimed speed but is still excellent.

The same text printed in NLQ Roman pica took 47 seconds – or 33.5 characters a second. That is commendable for a 9–pin printer, although it is slower than a 24–pin machine, which could be expected to take around 36 seconds to complete the page.

Print quality is good but not outstanding. The serifs on the Roman typeface are very square and give it a somewhat chunky appearance. The dotty quality of a 9–pin print head is particularly evident on the rounder letters, such as the "o", "c" and "d".

Graphics printing is also quick. It took just over three minutes to print a 4.5 × 7 inch colour image from a paint program, using the Amiga's 1.3 Epson printer driver.

I do not find dot-matrix machines a satisfactory means of producing colour prints. No dot-matrix printer deals well with solid blocks of either black or colour. You are always aware of the lines caused by the various passes of the print-head across the paper.

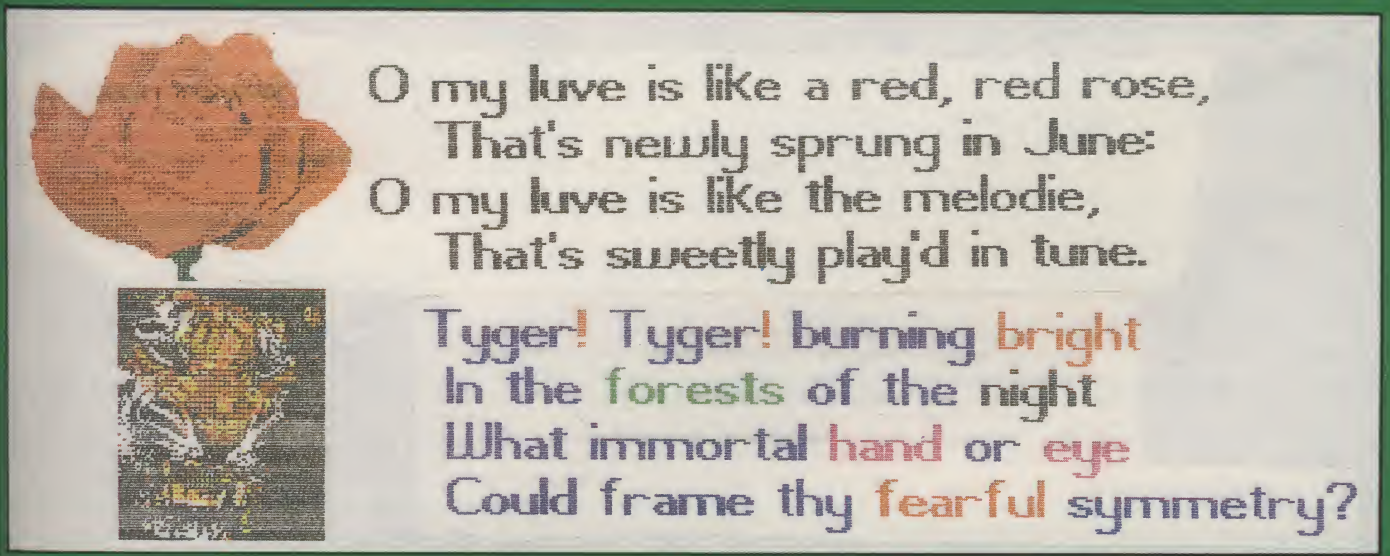
The situation is not improved by using four colour ribbons. The head moves up and down to print in different colours and also superimposes one colour upon another in order to achieve a third colour. In the process the yellow ribbon tends to become smeared so that it does not always print true. The colours tend to be flat and subdued in tone.

"Its draft pica mode was exceptionally quick, taking 19 seconds to print the page. This is as fast as any dot-matrix printer I have used."

The printer's horizontal resolution of 72 dots per inch is also low enough for you to be aware of the print's dotty quality, especially on blocks of colour. But the EX–800 performed as well as most other colour dot-matrix printers and was much faster than Epson's old colour model, the JX–80.

If your main interest is in obtaining colour graphics, then you will get better results from a thermal or an ink jet printer. However, unless you fork out around £1,000 for an ink jet, neither it nor a thermal printer will be much good for printing quantities of text.

The EX–800 provides an acceptable quality of print at a high speed. Its colour option is a useful additional extra. As an easy-to-use dot-matrix with the ability to produce reasonable colour output if required, it shows there is still life left in 9–pin printers.



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PRINTERS

continued from page 64

been available, which once suitably modified, would become one of the most important advancements in the world of printing. This mythical device was ... the photocopier. Without going into to much detail, a photocopier works something like this: a light sensitive drum is charged to a high voltage. A bright light is shone onto the page you want to copy. The reflection from this is then focused onto the light sensitive drum. The nature of the material of which the drum is made causes it to lose its charge anywhere light is shone.

Therefore, where no image is reflected because that part of the page is black, text etc., the drum remains charged. Where the page is white the light is reflected and the drum is discharged. As the drum rotates it passes over a container of very fine powder (toner). This is attracted to the areas of the drum that are still charged, i.e. a copy of the image on the page. The drum continues to rotate and is brought into contact with a sheet of paper with an even higher charge on it. The very fine powder is attracted to this and transfers to the paper. The paper is then fed through a pair of heated rollers that seals the toner on the paper thereby creating a photocopy.

If you remove the light, the lens system and the mechanics that scan the original copy what you are left with is a fairly small printing engine. Add a few things like a fast computer, a megabyte or so of memory and a laser and you have a very high quality printer. The internal computer reads in a page of information from the main computer. It then scans the charged drum with the laser, which it can move electronically and switches the beam on and off to determine, with great accuracy, which parts of the drum are to hold a charge and which are not. What follows next is exactly the same as in a standard photocopier and out comes a printed page. There are, however, a few inhibiting factors to laser printers. They are not cheap, in the UK they start at about £1,500 and go up to many thousands of pounds. To print a page of text is reasonably easy, as the laser printer has enough memory to hold the complete page. In fact it can hold many pages of text. When it comes to graphics, however, things become more difficult as many laser printers do not come with enough memory to hold a complete page of graphics. Additional memory is usually available as an add-on at extra cost!

The reason why a laser printer needs so much memory is that it must hold the information for the entire page, because once it starts to print a page it cannot stop to wait for the host computer to send the next part of the page. Text can be encoded as standard ASCII which requires little memory but when it comes to graphics it is another story. The typical resolution of a laser printer is about 300 dots per inch. So if you have a printable area of 8 inches by 11 inches, that represents a total of 7.92 megabits or 990 Kbytes of memory. Various algorithms may be used to compress the image but the resulting data still requires a lot of memory.

Laser printers have many of the problems of photocopiers and a few more besides. They are also expensive to run. Consumables such as the toner can cost up to £90, which will print about 5000 sheets. This is obviously an area worth investigating before prarting with your hard earned cash.

Plotters

A more specialist type of printer is the plotter. These are usually slow and cannot produce photographic quality. They do, however, play a very important role in several areas of computing. Plotters range in size from the very small, roll fed units having a paper width of only 4 inches, up to A0 drafting machines. It is in the world of computer aided design (CAD) that many of the larger plotting machines are to be found. In the engineering world mid range size plotters are used for circuit design, printed circuit layouts etc. The smaller units tend to be used in the office environment for the preparation of graphical reports and statistics.

Plotters work on an X-Y basis and are often referred to as X-Y plotters. There are two basic designs for plotters, the oldest is to lay the paper on a flat bed and have a carriage that spans the width of the paper. One set of mechanics move the drawing head along the carriage while another set moves the carriage along the length of the paper. The second system was normally found on the larger machines but it is now becoming more popular with the smaller machines as well. There is still a carriage that has the drawing head mounted on it but it is fixed. The paper itself is moved, normally by means of a set of rollers.

The type of pens used with plotters is very varied, everything from ball point to drafting pens. There is one very special system that uses a lightbeam (photoplot) onto photographic paper.

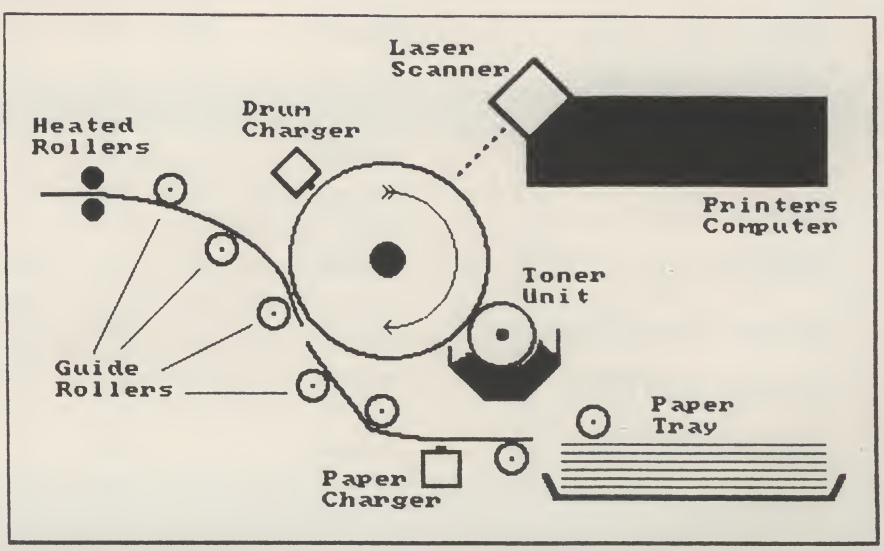
This produces very fine lines and detail on very large sheets of paper. The machine is very small and is mounted on a stand. This allows the paper to be draped over it and thus take up much less room than a flatbed plotter.

Plotters are very specialized pieces of equipment and are not used for printing large quantities of text. Needless to say they are quite capable of writing the labels for the axis of any graphs that you draw with them. Plotters can also be equipped to select from a range of different pens, thus it is possible to vary the line thickness and the colour simply by selecting a different pen.

Colour

Having mentioned colour use in plotters you would not be too surprised to discover that colour printers are also available. There are primarily two types of colour printer; the thermal transfer and the inkjet. A colour inkjet is identical to the normal inkjet except that it has sets of jets for the three printing primary colours and a set for black. The three colours are cyan, magenta and yellow. This is different to the normal primary colours but printing is slightly different. Some printers use a greater range of colours to help the mixing process. Black is used to darken colours and for regular black text.

Thermal transfer printers work on a different principle. Depending on how



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PRINTER GUIDE

INKJET PRINTERS

Model	Nozzles	Max cps	Colour	£
Canon PJ1080A	4	37	Y	499
Daisy M2001	24	220	N	535
Epson SQ2500	24	450	N	1349
H-P Deskjet	50	240	N	795
HP-Quietjet	12	192	N	574
HP-Paintjet	50	167	Y	1089
HP-Thinkjet	12	150	N	459
Integrex 132	4	40	Y	655
Xerox 4020	20	80	Y	1250

PAGE PRINTERS

Model	Type	PPM	P'Script	Fonts	£
AST TurboLaser	Laser	8	Y	35	3444
Brother HL8	Laser	8	N	5	2195
Brother HL8/QS	Laser	8	Y	5	3656
Canon LB-8II	Laser	8	N	4	1750
Centronics PP8	Laser	8	N	1	975
Citizen 106	Laser	6	N	6	1595
Citizen 112	Laser	12	N	8	2395
Epson GQ-3500	Laser	6	N	7	1795
H-P LaserJet Plus	Laser	8	N	16	3995
H-P LaserJet II	Laser	8	N	16	2250
NEC LC815	LED	8	N	4	2250
NEC LC890	LED	8	Y	35	3950
Qume CrystalPrint	LCS	6	N	2	995
Qume LaserTEN	Laser	10	N	35	2683
Qume ScripTEN	Laser	10	Y	35	4900
Star 8	Laser	8	N	8	2195

DOT MATRIX PRINTERS

Model	Pins	Draft	NLQ	Colour	£
Amstrad DMP 3250	9	160	40	N	199
Amstrad LQ3500	24	160	54	N	229
Brother M2518	18	300	75	Y	895
Brother M1109	9	100	25	N	195
Brother M1209	9	140	35	N	265
Canon A-60	9	200	34	N	478
Canon PW1080A	9	160	30	N	349
Citizen 120D	9	120	25	N	199
Citizen LSP-100	9	150	30	N	169
Citizen 180E	9	175	30	N	263
Epson EX-800	9	300	60	Y	629
Epson EX-1000	9	300	60	Y	829
Epson FX-850	9	264	34	N	459
Epson FX-1050	9	264	34	N	599
Epson LQ-500	24	180	60	N	399
Epson LQ-850	24	264	88	N	659
NEC P6 Plus	24	265	90	N	649
NEC P2200	24	168	56	N	395
Panasonic KXP1081	9	120	24	N	179
Star LC10	9	144	36	N	259
Star LC10CC	9	144	36	Y	299
Star LC24-10	24	170	50	N	399

The printers' speeds, given in characters per second for the Inkjet and Daisywheel printers, and in both draft and NLQ (Near Letter Quality) modes for the Dot-matrix printers, are the maximum possible. In everyday use the speeds are likely to be significantly lower. The speeds of the Page Printers are given in pages per minute. Apart from laser printers, some using Adobe's PostScript Page Description Language, examples of alternative technologies are included, such as Light Emitting Diodes and Liquid Crystal Shutters. All the printers listed can be connected easily to the Amiga.

DAISYWHEEL PRINTERS

Model	Max cps	£
Brother HR20	22	445
Juki 6100	20	399
Juki 6200	30	579

continued from page 69

much you want to pay, the print head comes in two guises. The first is similar to a standard printer i.e. a moving head. The second and far more expensive type is to have a head the entire width of the paper. Machines of this type can cost upwards of £7,000. They print, however, in a similar way. A ribbon is coated with wax of the three primary colours and the head melts a small part of the wax onto the paper. Three passes are made, each one using the next colour and when all three passes are done you end up with a full colour print. The ribbon is divided into three colour segments and is not reusable, i.e. when you print a line of text or graphics you then go onto the next set of three colours. You usually need to select the paper very carefully, glossy paper works best and I have seen some very good results using this type of printer. (A review of a colour thermal printer appeared in the April issue of ***AUI***. This type of printer also lends itself well to producing colour transparencies.

The ink is also designed to be totally transferred to the paper. In fact you can read what was typed by just looking at the ribbon. Several interesting court cases have made reference to people reading other peoples letters in this way but that is another story. Single strike produces excellent quality print but it can work out quite expensive. For work that does not need the quality of single strike there is multi strike. This works in a similar way. Again the ribbon is only used once but the ribbon is only advanced a small amount for each character and is formulated in such a way that not all the ink is transferred, leaving enough for the next character to use. Finally, for the really mundane work there is the standard nylon/fabric ribbon, normally held in a continuos loop cassette. These are used until you, the user, decide that it needs changing. The result is that the text gradually gets fainter and fainter until, if left long enough, it becomes almost unreadable!

Ribbons

With the exception of inkjets and lasers most printers need a ribbon. For Daisywheels and the like there are several different types that can be used. If you want the highest quality a single strike ribbon is the one to go for. This presents a new area of ribbon for every character.

Dot matrix ribbons are nearly always of the nylon type and in general give very acceptable results. Some ribbon cassettes are reloadable by the user. This can be a bit messy until you get the hang of it but it does reduce the costs quite a bit. Fortunately ribbon prices are coming down and it is questionable if the refillable cassette will be with us much longer. When buying ribbons for 24 pin printers make sure that they are the special fine weave type. DO NOT USE any old ribbon as it can be a quick way to ruin the head if you do!

The future

There are quite a few printers on the market at the moment and it is hard to tell just where the trend is going. I can see several 'wars' developing especially between the 24 pin matrix, the inkjets and the lasers. Lasers are expensive to buy and to run, mainly because in the past if you wanted quality graphics you had to have a laser printer. This is not true any more and it is reflected in the new low priced (if you can call £1,500 a low price) laser printers now on sale. The 24 pin and the inkjets are beginning to offer the resolution and fonts that were the main strengths of the laser. As far as the consumer goes there is a choice at last. If I had to pick the type of printer with the most potential it would have to be the inkjet. This is just about the only technology that can handle colour with any degree of economy, which in the long run will sell the pritner to the user.

A.E.

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DATABASE EXHIBITIONS

PREVIEW

Dri

Driller, the first game written with Incentive's excellent Freescape system is about to surface on the Amiga. Freescape is a system that allows the creation of landscapes that can be viewed in solid 3D from any point looking in any direction. This is really little different from the display routines used by games such as Mercenary and Battle Zone, except for the solid graphics replacing the transport vectors but Incentive's system has carried it to a much higher level.

Your mission in Driller involves the stabilising of a moon on the brink of explosion. Ever since a hostile race known as the Ketars fled the moon, a great built up of gas caused by disused mines has threated the existence of Evath, you home planet. You have been sent up to relieve the moon of its gases by drilling into the surface of its 18 sectors.

Problems arise when you realise that the gas is in small dense pockets in each sector and you have only been given one drill per sector. This calls for a great deal of exploration and observation of every nook and cranny of the moon. Fortunately, clues have been laid down as to the pockets' exact locations, some obvious, some highly disguised.

Speed was a problem with the original 8-bit versions, but Amiga users will be glad to hear of its vastly increased pace in 16-bit formats.

"The control panel is very well detailed and now interactive, meaning that not only does it house a host of digital read-outs but also has control icons"

ruling out the otherwise necessary keyboard controls. Sampled sound effects, additional

iller

gameplay features and improved graphics promise to make this the best version yet.

We have had only time for a brief look at this highly complete and extremely challeng-
ing game.

Whether Driller can compete with the recent solid 3D wonders Carrier Command and Starglider II, only time and a full review will tell. Watch this space!

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NOVEMBER 1988

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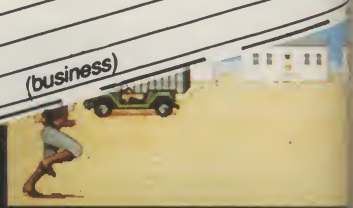

MENACE

AMIGA PROGRAMMING

Do your C progams sometimes need an extra spurt of speed? This month Paul Andreas Overaa shows you how to use assembler routines from within your C code.

One of the agreeable things about C (and other compiled languages) is that individual modules, once created, can be used without worrying too much about their internal workings. The 'test bed' program that we looked at last month for example can be used to produce a module which will take care of many of the Amiga's 'resource handling' problems. One of the benefits of having such a module available is that it can provide an environment which makes assembly language programming easier to cope with. We said last month that we would look at something a bit more ambitious and this is it... how the 'test bed' program can be used in conjunction with assembler code.

Why use assmbler anyway? Well even though C is (arguably) the most suitable high level language for serious Amiga programming, there are still times when it is useful to work in assembler for that extra performance. The price you pay for such a choice is firstly that your source programs become more complex and usually more difficult to read and secondly the program development cycle takes longer. The best compromise in many cases is to use C for the code which is not time critical and supplement it with assembly language modules where you need the speed. To be able to do this you need to know how to handle the 'mechanics' of getting from C program code to the assembler code, how to produce the individual modules... and how data can be passed between them.

Let us take a specific example: we will use the 'test bed' program to set up the screen/window environment and then transfer control to an assembly language module. When you first experiment with this type of mixed code it's best to keep it simple... so we will, by way of example, stick to a straightforward call to the graphics library RectFill() function mentioned last month. In order to do this the assembler code will need acces to the global—rastport—p variable but we will deal with this in a moment.

Firstly let us look at what happens when a C function call is executed. If we place a function call to a routine, say...AssemblerPatch(), in the C test bed source program we create this situation: when the source is compiled the compiler uses the source code statement to generate a reference to the routine AssemblerPatch(). The compiler actually adds an initial underscore to the function call name, so the call to a C function AssemblerPatch() will result in the linker looking for a routine called _AssemblerPatch. The exact code that the various C compilers produce when they encounter a function call may vary slightly but the end result is usually that any parameters will be pushed onto the stack and then a call made to the appropriate subroutine.

If we place the AssemblerPatch() call in the C source we must make sure that we provide an appropriate object code module called _AssemblerPatch. To do this we write an assembly language source program and assemble it to produce LINKABLE object code, as opposed to directly executable code. The simplest routine that we could write would be one that did absolutely nothing...

```
XDEF_AssemblerPatch
XREF_global_rasport_p
_AssemblerPatch rts
```

XDEF is an assembler directive used to define labels as 'public', i.e. visible to other modules at link time. We must include this line otherwise the linker will not be able to resolve the _AssemblerPatch reference in the C module object code.

To gain access to the C variable 'global_rastport_p' we must also inluce a XREF directive. This will then inform the assembler that the information needed about the item in question will be imported when the assembly language module is linked. A minor snag can arise because some assemblers place a limit on the number of characters within a label that will be regraded as significant. If, like us, you tend to use long variable names it may be necessary to shorten those names which relate to functions and variables whose reference will be passed between modules.

This might mean that instead of using...

```
XDEF_AssemblerPatch
XREF_global_rastport_p
AssemblerPatch rts
```

you might have to reduce the length of the variable name global_rastport_p and write...

```
XDEF-AssemblerPatch
XREF-global_rport_p
_AssemblerPatch rts
```

In such a case this would also mean that the references to global_rastport_p in the C module's source code would also have to be shortened to global-rport-p. We have made such a change in this month's example code by way of an illustration... so if you use our abbreviated pointer name be sure to alter the test bed C source program as well.

Before we can use RectFill() from an assembly language routine it is

cont. on next page

continued from page 77

necessary to know how to pass the RastPort pointer and rectangle co-ordinates. We must get this information from the Amiga's Libraries and Devices Manual which tells us that the RectFill() function has the following parameter requirements...

RectFill (global-rport, xmin, ymin, xmax, ymax)
registers A1 D0 D1 D2 D3

This month's assembly language example simply preserves register A6, loads some rectangle co-ordinate data into registers D0-D3, loads the RastPort pointer into A1 and then uses the macro (which you will find in the graphics_lib.i header file) to create a call to the RectFill() routine. Once this has been done register A6 is restored and the routine passes control back to the 'test bed' module (via a subroutine return 'rts' instruction). When you run the program a rectangle will appear on the screen, remaining there until you terminate the program by 'clicking' on the left mouse button.

It is as well to point out that any assembler routine you write MUST adhere to the conventions that your particular compiler adopts. Lattice C, for example, will expect you to preserve the contents of registers D4-D7 and A2-A6. Our example used the CALLGRAF macro which destroys the contents of A6... this is why we pushed it onto the stack whilst we made the call to the graphics library.

We compiled the skeleton 'test bed' C program using the Lattice compiler, the assembler routine was assembled into linkable object code format using HiSoft's 'DevPac' assembler. Finally the start-up code, the 'test bed' module and the assembly langauge example module were linked together using the Public Domain program BLINK to produce the final executable version of the program.

P.A.O.

```
/* ========================================================================== */

        /* Fragment of the 'test bed' program showing the call to */
          /* the assembly language routine as a 'C function'  */

struct   IntuitionBase   *IntuitionBase;
struct   GfxBase         *GfxBase;
struct   Screen          *global_screen_p;
struct   Window          *global_window_p;
struct   RastPort        *global_rport_p;  /* note: reduced name size */
struct   ViewPort        *global_viewport_p;


main()

{

BOOL allocate_resource(),begin_block();
void AssemblerPatch(),end_block();

if (begin_block()==TRUE) exit(FALSE); /* grab required resources or quit */

        /* ____________________________________________________ */

        /*      This is where you put the test code stuff      */

            /* e.g. THIS MONTH'S EXAMPLE IS */

            AssemblerPatch();

        /* ____________________________________________________ */

Wait(1<<global_window_p->UserPort->mp_SigBit); /* ANY message will end it all*/

end_block(); exit(TRUE); /* give back resources and quit */

}

/* ========================================================================== */
 * ========================================================================
 *                      ASSEMBLY LANGUAGE TEST MODULE
 * ____________________________________________________________________

                        incdir  "df0:include/"
                        include  graphics/graphics_lib.i

 * XDEF defines labels used in THIS module to be public, i.e.visible to other
 * modules being linked.

 * XREF identifies labels which are unknown at assembly time but that will
 * be imported (read in from another file) at link time.

                        XDEF    _AssemblerPatch
                        XREF    _GfxBase
                        XREF    _global_rport_p


_AssemblerPatch         move.l A6,-(sp)             preserve A6

                        move.l   #100,D0            Box co-ordinates are
                        move.l   #050,D1            placed in registers
                        move.l   #200,D2            D0 to D3. RastPort
                        move.l   #100,D3            pointer goes in A1
                        move.l   _global_rport_p,A1

                        CALLGRAF RectFill           macro call

                        move.l (sp)+,A6             restore A6
                        rts
```

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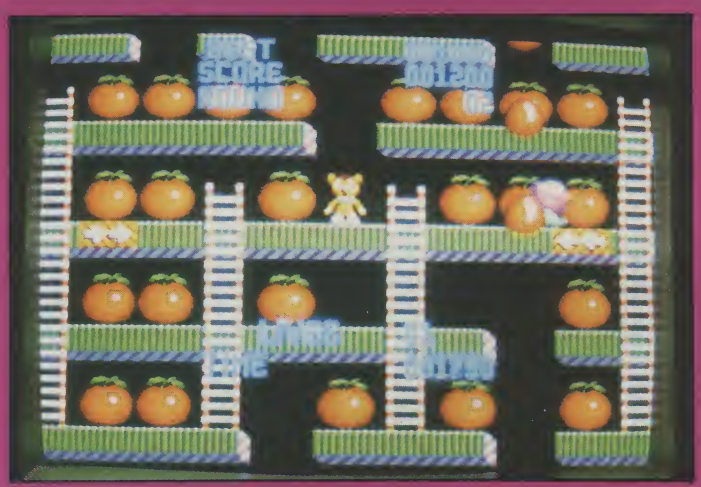
Robbeary

Anco

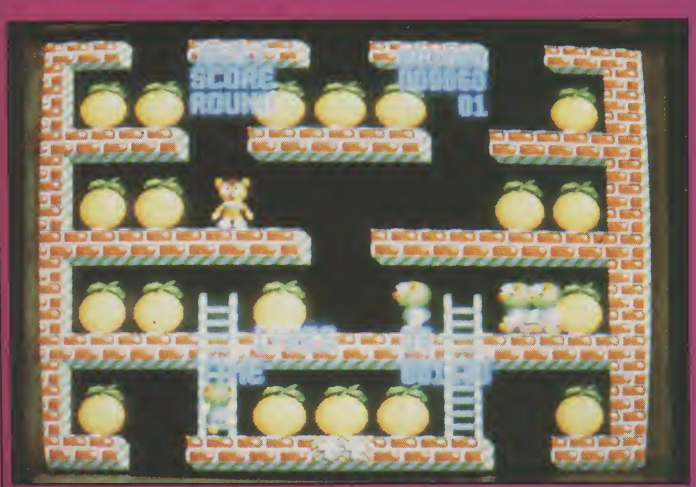
So you've explored mines with Willy, blown bubbles with Bub and Bob and saved the maiden with Mario, but have you ever robbed a department store with a teddy? The awkwardly-titled Robbeary gives you the opportunity of raiding a 24-floor mega-store of its fruity contents.

The game opens with the obligatory irrelevant parallax starfield backing the title screen. A short entertaining sample borrowed from a Pet Shop Boys intro is looped continually until you start the game. If you have read between the lines of the scenario you will not be surprised to hear that Robbeary is a traditional platform game. It would seem that this store is an enormous greengrocer's shop, for almost every bit of floor space is occupied by big juicy pieces of fruit. Collect them all from the current screen to get to the next.



"Spending too long on any screen causes the guards to mutate into eggs for a few seconds before hatching out and chasing you at double speed."

Security guards take the form of monsters who patrol the platforms and ladders in the usual dense but deadly fashion. Holes at the bottom of the screen wrap around to the corresponding gaps at the top, just as in Bubble Bobble. Again similar to Bubble Bobble, there are loads of extra little tokens to be collected. Their effects are usually beneficial, for example freezing the baddies, turning them into diamonds, filling the screen with fruit or doubling your speed. Spending too long on any screen causes the guards to mutate into eggs for a few seconds before hatching out and chasing you at double speed.



Beartie is a very neatly drawn sprite, as are all the enemies. Everything is large and very colourful, no doubt designed with a younger player in mind, the graphics certainly impress. This is all very considerate, but if it really is aimed at the lower end of the age scale the difficulty level should have been taken into account. As a capable and experienced gamer it poses no problems for myself in that area but it could be just that bit too demanding for the cuddly toy crew. But you never know just how good kids are these days.

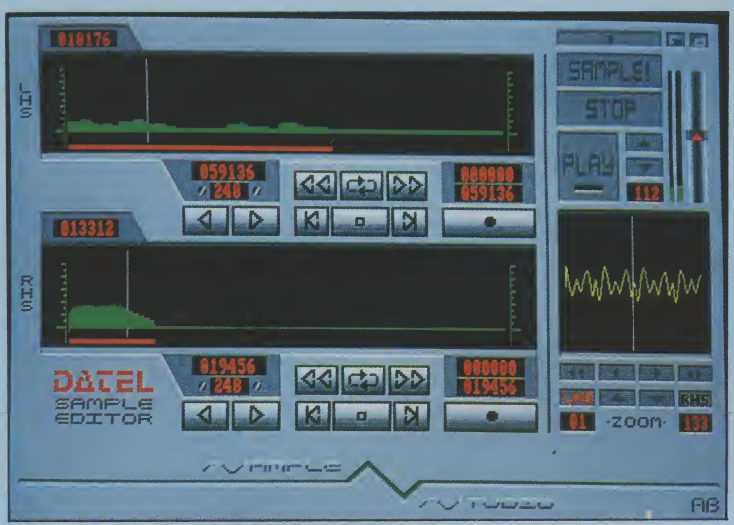
Sound effects during the game are suitably jolly, though it is a shame the title piece never gets anywhere. Whilst Robbeary is excellently presented you cannot get away from the fact that it is just another collect 'em up platform game. At just under a score, I was surprised at its price (especially coming from Anco). All the same, Robbeary is definitely one of the better platform games around the Amiga at the moment, and if you have a younger player in mind it would be an ideal choice.

B.V.

Graphics: 8
Sound: 7
Playability: 6
Value: 6

Price: £19.95

DATEL ELECTRONICS



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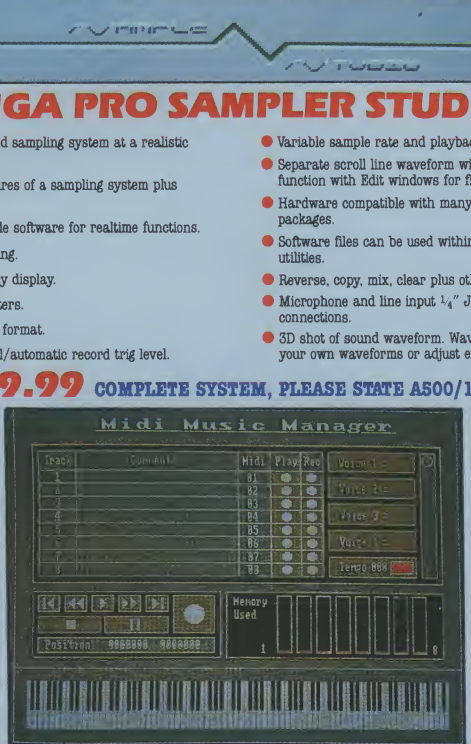

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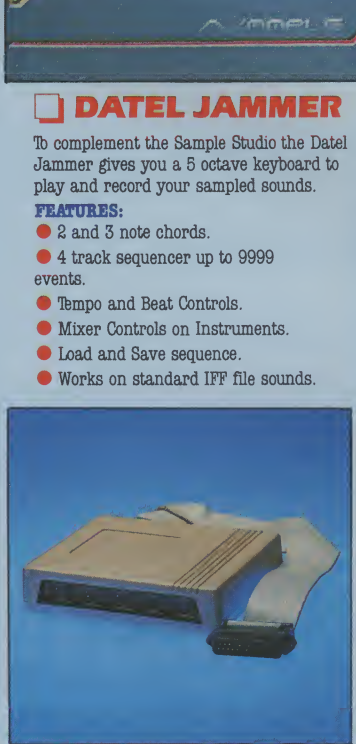

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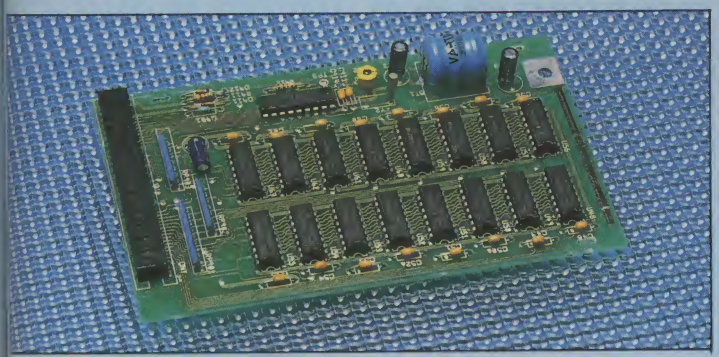

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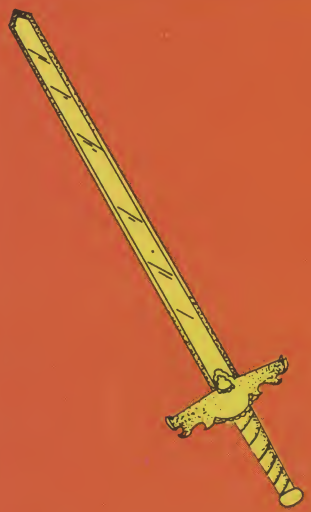
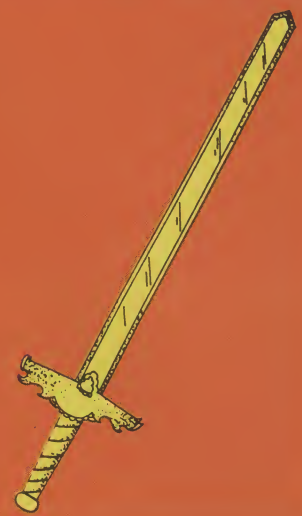


LEGEND OF THE SWORD



Rainbird

Andy Moss visits Anar in his quest for the Legend of the Sword

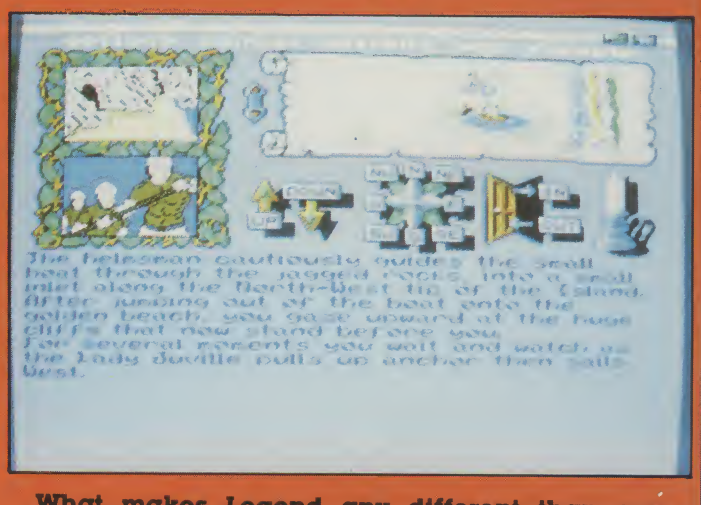
Once in a while, an adventure comes along in a reviewer's life that makes everything worth waiting for, that adventure is Legend Of The Sword.

The game tells of the chronicles of Anar and the mystical sword and shield whose magical aura protected the inhabitants of Anar for many centuries. Time Past these items into folklore history along with the Corsarians who supposedly guarded them.

Anar has now been invaded by hordes of humanoids under the control of Suzar, and rumour tells that only with the combined force of the Sword and Shield will it be possible to defeat the invaders. You and a band of loyal men volunteer to find the enchanted artifacts and take on Suzar before time runs out. So a ship drops you and your party off on the uncharted island of Anar to begin your quest. This is the point where the game opens, and right away you are faced with a decision. Which out of the three possible landing points do you pick? Something tells me that only one will be fruitful.

On screen you are presented with four different sections. The top left hand area, is used for over 350 individual illustrations which change with your situation, the top right portion is your scrolling map, which only appears bit by bit as you explore the land. The middle portion of the screen is given over to all working icons like movement, in or out, up or down and a candle which shows your lifeforce (which can be lengthened by eating or drinking).

The whole bottom third of the screen is used for the text, and a lot of it there is too with some very descriptive passages. The parser is a delight to behold. As well as all the usual commands, along with oops and undo, there is the very useful GOTO command, (pioneered by Level 9) which saves all that repeated key hitting when you know where you are going, having been there before!



What makes Legend any different than any other adventure then? Quite simply how the game unfolds. The way the story comes to life, as you move along the map is almost akin to reading a book, and when you are asked to make a decision, invariably the words you choose will be understood. The map can be expanded to take up the whole screen if you wish, and some of the pictograms are very realistic. There are bags of humour, and a very real need to communicate effectively with the other members of your party, although when there is fighting to be done it is left to you to get on with it. Not that it seems to do you much good to begin with, because what will happen is that your mightily heavy broadsword, you know the one, it's shiny, and has a delightful carved effigy on the handle (so the description goes) it breaks on contact! Well, the first few times anyway, what you must do is persevere as eventually your skill in swordplay will increase and then you can really set about the bad guys.

The box contains a novelette, which does contain some clues, and a poster, but what won me over in this game is Legend Of The Sword's sheer playability. It's so user friendly, and there is even a help command which kicks in without you asking it to.

Go get *Legend Of The Sword* right now and start having a ball!

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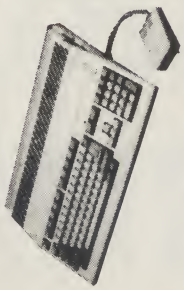

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The Problem Solvers

HEARD IT ON THE GRAPEVINE!

More mutterings from behind closed doors? The intrepid Edward Ake investigates.

Heard a whisper from Digital Integration about their hot and upcoming flight simulator — F16 Combat Pilot — "solid graphics, way beyond anything currently on the market, full digitzed sound" David Marshall even had me fascinated as he describes what he says is going to be a thoroughbed simulation of the F16.

When asked about any similarities to E.A.'s "Interceptor" David was at great pains to stress that F16 Combat Pilot is intended as a full flight simulation of said aircraft and not just a game! Sounds great! Expect news of release early in the New Year.

Whilst with Digital Int. two more games in the pipeline are "A.T.F." and a motor cycle simulation. ATF is the 16 bit conversion of the successful strategy/arcade game from the 8 bit machines. As with F16, it will also feature solid graphics. You can expect to be piloting your aircraft over solid undulating terrain in your eternal mission to seek out and destroy your foes and keep the world safe. "The accent", says David, "will be on simplicity, speed and action in the same theme as the 8 bit version". Hot stuff!

The motor cycle simulation — expected around Easter will be from a similar stable as T.T. Racer but will feature high speed, high powered track racing on representations of the world's top Grand Prix circuits. Looks like what all you frustrated Moped riders have been waiting for!

Whilst on the subject of space trading games (and we weren't!) a hot rumour has come my way concerning 'the greatest game ever' — Elite. It seems that the 16 bit conversion, due in November, of Elite is competed but the programmers are nearing the finish of Elite 2 and if it is ready will be available for the Christmas market and Elite 1 discarded. If not then Elite 1 will

appear first followed by Elite 2 early in the new year. Personally I look forward to seeing Elite in any form!

Anyone know the whereabouts of the Holy Grail? Then you could be interested in Level Nine's next project — Lancelot. Billed as a text and graphic adventure based very closely on Mallory's novel Morte'D'Arthur, it consists of at least 300k of text and 30 hi — res graphics in drop down form.

Lancelot covers the period in the novel from his arrival in Camelot to his finding of the Holy Grail, including his affairs with Guinevere and other ladies of the knight. "What about the naughty bits!" I heard someone cry — well you'll have to buy the game to find that out and to help tempt you the publishers, Mandarin, are running a competition with a prize of a solid silver chalice worth £5000 to the winner. Sounds like it's joust up my street!

There is nothing else planned from Level 9 this year but in the pipeline for earlynext year is an adventure in which you play a ghost. Should solve the problem of getting killed all the time! The basic idea is that you have been murdered by a gang of criminals and you come back as a ghost to get your revenge, in the meantime saving hostages from the gang and generally doing good. As you get better in the game you will also find yourself winning promotion up the ghostly scale

— Perhaps even to Poltergeist IV! Level 9 hope that the game will be played in the right spirit!

Gremlin have some new releases on the way, among them the much heralded Federation of Free Traders (FOFT). From what I've seen of it so far FOFT is likely to give Elite a good run for its money and you can expect to see it early autumn.

Other Gremlin Hewson releases due in the near future are the good old space blast-em-up Zynaps where you get to kill everything in sight from the start followed by even more violence and mayhem as you progress through

continued on page 88

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continued from page 86

the game picking up more weapons as you go. Lots of death and slaughter and big bangs — Great game!

Just by way of a change though, unless you're a hooligan that is, if you care to don your football boots and muddy shorts you can become Roy of the Rovers (go, on, you remember him!). Sort of Dan Dare of the football field, really.

Other forthcoming Gremlin Hewson releases are the relaxing Motor Massacre (A day on the M25?), Cybernoid, Technocop and Ultimate Golf (Wot no killing?).

Tried to talk to Infogrames about their latest news but all I got was the telephone minder who said "No comment, but the pictures were absolutely stunning!" Ho Hum — Although if Captain Blood is anything to go by, he's probably correct. Nevertheless I do know about Hostages, a strategy/arcade game which has you mounting a rescue operation against a gang of terrorists holding hostages. It looks and sounds superb and should be with you by the time you read this.

Llamasoft are currently working on the Amiga version of Trip-a-Tron. I expect this to be suitably enhanced for the Amiga and not a straight port from our poorer 16 bit cousin, especially as it is meant to be a sound and graphic synthesizer.

Remember the flying, fire spitting camels and llamas of your 64 days? Well the rumour is that Llamasoft's Jeff Minter may consider bringing them on the Amiga next year. Be just like old times, won't it?

LETTER FROM AMERICA

News from our American cousins over the water is that Broderbund who brought us the incrdibly stunning Fantavision are bringing over Downhill Skiing specially enhanced for the Amiga. It wil involve 4 events: The Slalom, The Giant Slalom, Ski Jump and Downhill Racing. It is due in early Autumn so get your red anoraks and sunglasses ready!

Broderbund also expect to have at least 3 more releases by Christmas — Auto-Duel is one, followed by a "Police-action game" and a "Space-oriented game" Neither are titled yet but there should be more details next month.

Cinemaware are certainly not hanging around either with three releases set to appear on the Amiga in the next few months — Rocket Ranger is expected any day now and it will be adapted to run on the unexpanded A500, you'll be glad to know. So stand by to save the world from Nazi domination and Alan Sugar. Hot on the heels of Rocket Ranger will be T.V. Sports Football, a simulation of the entire U.S. 28 team, 16 game football season including play-offs. Look out for the best cheerleaders this side of Anfield too. See the photos in this issue.

Lastly we have Lords of the Rising Sun. Set in 12th century japan you get involved in civil war which you have to win to become Shogun which then entitles you to chop of peoples heads — terrific fun for all the family!

Right that's it for this issue. There'll be lots more news for you each month and you can expect those already mentioned to be fully reviewed in this magazine, until then if you hear any hot gossip why not pass it on to us for everyone to hear!

E.A.

Powerplay-Update

Arcana

Launched earlier this year, the original Amiga Powerplay put you in control of the ancient Greek gods in a cross between chess and Trivial Pursuit (reviewed in March '88 AUI). Now Arcana have released an enhanced version with improved graphics and sound but have left the popular gameplay just as it was.

Most noticeable additions are the large and highly life-like portraits that accompany the gods as they take their turns (twenty one characters in all). Other graphic enhancements include more detailed backgrounds in both the main screen and the challenge sections. Finally, an encounter with the mighty Zeus crops up at the end of each game, together with a snippet of sampled speech.

Unfortunately, Arcana have not made the game any more user-friendly. This was the original's only real failing and should have been at the top of the update list. Still, it remains an enjoyable, though rather drawn-out alternative to the more conventional quiz games.

T.H.

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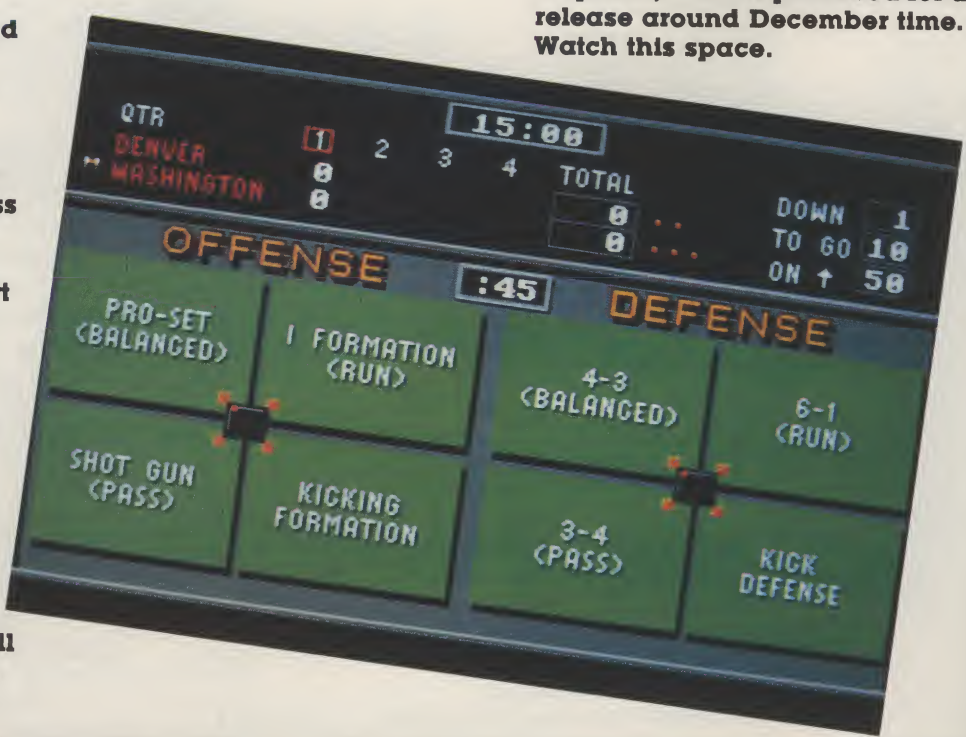
TV Football

Andy Moss continues his blitz on Bob Jacobs, sneaks a preview of Cinemaware's TV football, and touches down early in the game...

It was only a matter of time before Cinemaware decided to bring their unrivalled skills in producing supremely lifelike animation into other subjects of computer entertainment. Choosing Sport was no surprise as for years boss Bob Jacobs has yearned for a truly lifelike simulation of American Football. I can report that he is well on the way to achieving what can only be described as the first almost totally faithful replica copy of TV football as we know it. You get all the razamatazz, from cheerleaders, fans in the stands, a half-time show, including a marching band, and comments from broadcasters in the studio. On top of this you get a real football game with real digitsed grunts and groans from the players, and get to play coach or quarterback, or both, have complete control over your whole team, and play either as one of two players, two players versus the computer, or just let the computer play both sides and just watch the action. There are 28 teams playing a 16 game schedule, and just like real TV the other games are being played simultaneously so while your game is underway, scores of other matches scroll across the screen. In the demo game I played, I beat the Washington Redskins 16-10 in a gruelling defensive game that only tilted on my exceptional wide receiver doing the business. So far this is just a taste, there is even more to be put in, but it is promised for a release around December time. Watch this space.



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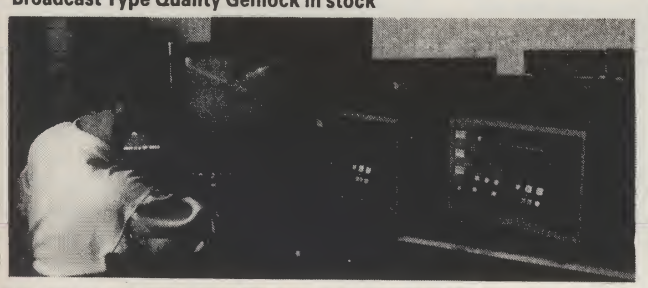

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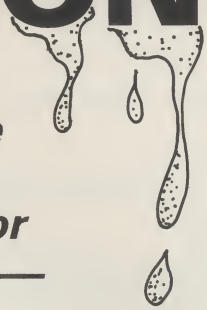

There are probably more Virus Killers around now than there are viruses. Ron Webster, however, finds there is still enough room for Discovery's new Virus eliminator — VIP.

One of the most famous, or indeed infamous, facets of the Amiga world is the existence of a multitude of viruses. An irresponsible craze for creating destructive and infectious software has produced a population of computer users who are concerned about using disks supplied by even their best friends. There are many cures on offer from both commercial and public-domain sources. one of the latest developments, called 'Virus Infection Protection', comes from Discovery Software International who are well known for their quality software, including Sword of Sodan (reviewed in AUI October).)ctober).

So what is so good about VIP that will tempt you to buy it in preference to using one of the many public domain virus protection utilities? In a word, versatility. Not only will it deal with all the boot-block hidden viruses known to date but can also be taught to recognise any new ones.

One of the biggest problems caused by catching a virus is that it can ruin the boot-block area of the infected disk. Using the INSTALL function of AmigaDOS is good enough as a cure for disks using the standard boot-block but many of the commercial software packages use their own boot formats. The danger is that, once ruined, a non-standard boot-block is lost forever unless a back-up has been taken. VIP can be used to take a copy of the boot-block of each of your disks BEFORE they are ruined by the criminally misguided efforts of a software psychopath. With all your boot-blocks safely held in databases managed by VIP you can rest assured that your disks are safe from the ravages of any boot-block resident virus.

VIP is fully menu driven with logically grouped functions. Although the action of each option is generally obvious from the name there is a full online help facility available in six languages. One of the menus selects the language to be used for both help and the menu titles themselves. The six languages offered are English, German, French, Italian, Spanish and Danish. Discovery certainly appear to work at the international aspect of their company name. Many of the functions available through the menus have associated 'hot-keys' in order for the experienced user to work faster than menus allow. The familiar and now almost mandatory, scrolling file-selection menus are in full accord with the simple-to-use elegance of this utility.

Starting VIP is a simple matter of double clicking its icon. The eighteen page A5 instruction manual offers the very good advice to always boot the VIP disk from a cold start (from power-on) instead of a warm-start which may leave a virus in memory. The manual includes a full description of each command together with a tutorial for the new user. The tutorial describes the creation of a database disk, archiving a boot-block to the database and the restoration of the block to an infected disk.

Only two of the five menus actually control the database functions. The other three provide the language selection, project menu and control of the check function. The check function offers a means of checking a disk for the presence of a virus and also learning new ones as they are discovered. The project menu gives access to online help and the predictable author and copyright information together with a brief explanation of the reasoning behind VIP and a means of escape back to Workbench. The check menu allows you to examine and classify functions. Examine is the detector function which will give a disk either a clean bill of health or name any virus recognised on it. Classify allows you to update the virus database with the pattern of a new virus and give the virus a name. Once classified a virus can be detected with the examine function.

The file menu controls the creation of boot-block databases and the manipulation of those files.

The file menu controls the creation of boot-block databases and the manipulation of those files. The file is in what is known as VIFF format. Before you can save boot-blocks you must create a database using the 'new' function. The 'save' and 'save as' functions store boot-block images in the database while 'load' retrieves them. The 'delete' function removes unwanted files while 'print' lists all entries in the database to a printer. The printed list also contains the file header information including the filename, creation date and a checksum.

The 'VIFF entry' menu allows access to the functions that operate on individual VIFF entries. From here entries may be displayed on the screen using 'view' or directed to a printer using 'print'. The 'make' function copies boot tracks from the disk to be archieved to a VIFF database. Individual entries can be deleted from a database using the 'remove' option. If you are in any doubt about the integrity of a boot-block you can use 'verify' to compare the archived copy with the current state of your disk. If a difference is detected the 'write' function will restore the disk to the original state by copying the VIFF entry back onto the damaged disk.

I have seen many virus guards and cures but none as impressively packaged as Virus Infection protection. The easy-to-use menus and convenient hot-keys are all well-thought out and a pleasure to use. Perhaps there is an element of overdressing what is a fundamentally tedious operation, but anything which can lighten the load of a maintenance chore is likely to be welcomed almost universally. I particularly welcome the inclusion of the Discovery technical help-line telephone number at the end of the manual. VIP provides a greater piece of mind at a time when valuable software is constantly at risk from corruption by infection. Especially if VIP is used with by a memory-resident virus detector. I will certainly be careful to keep a database of all my valuable boot-blocks, as I imagine will many more of you.

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continued from page 56

Home Accounts

When you have set up the system the next stage is to enter data into the system. It is at this point that any system can fall flat on its face. Any system relies on the user to input the data for it to work. Home Accounts is very easy to keep updated but I do have one grumble: If you are entering a long list of items as in a budget list, the only way to move from field to field is with the mouse. Now mice are a very good way of shifting things about but sometimes they are a damned nuisance and this is one such time. It would have been much better to have a means of moving from field to field from the keyboard, say using the Tab key. There is reference to the tab key but the **readme** file says that it does not apply to the Amiga. Pity, as that would have solved all the problems.

The program will keep track of the date so that on the dates that you specify, automatic transactions will take place. You may define up to 100 such transactions and that is more than enough for anyone with a sane bank account! Getting information out of the program is also very easy. You can sort and output data by various means. Types of transaction, accounts etc. can all be selected or not as the case may be. You can have the output in a statement format and there is a simple graph plotting facility as well. The bar chart is the more useful and the fastest but for some reason it takes a good deal longer to generate the pie charts. Output may be directed to the printer if required. There is a memo pad attached to each account so you can make a few notes such as card numbers etc. against the account.

There is one more point that the manual makes and that is data security. First you are told to back-up the program disks (there is no copy protection) and then you are told of the Grandfather, Father, Son method of data backing up. If you follow this system there is very little chance that you will lose any data. However, if you did trash a disk, the most that you would lose is one set of transactions and hopefully you would still have that data to hand so that you could recover from that situation very easily.

My overall impression of this program was one of **QUALITY.** It set out to do a particular job and it does that job without any fuss or bother at all. It is easy to use and performs the job that a spreadsheet could be programmed to do without any of the headaches that can bring. Within half an hour of opening the box, I had the demo up and running and was nearly through the tutorial. Within the next two hours I had set up my own account system and was extracting information from it. This is a HOME accounts package but it is just possible that a very small business of club could find it quite useful. The price . . . only £29.95 — **excellent value for money!**

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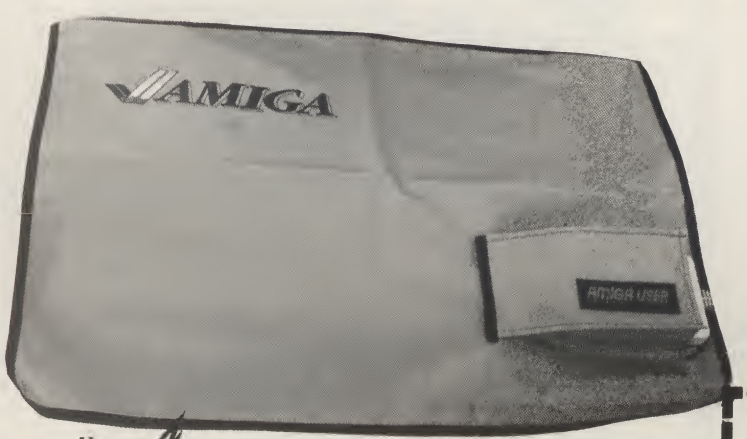

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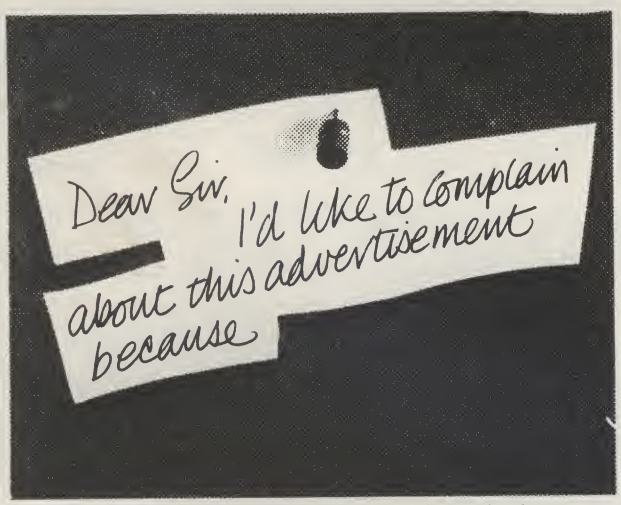

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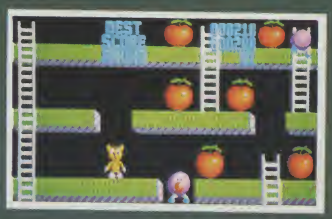

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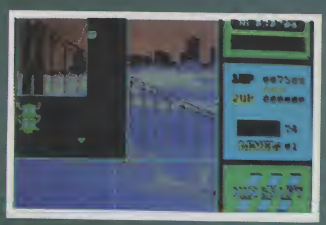

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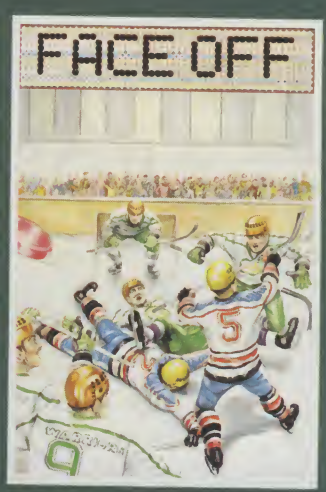

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